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LECTURES
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BY

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DISEASES OF THE NERVOUS SYSTEM.—*Spasmodic asthma; its simplest form. Symptoms and treatment of this species. Action of ipecacuan on the bronchia. Peculiarities produced by idiosyncrasy. Instrument for rapidly performing tracheotomy. Vomiting; it is a reflex, spinal, act. Mechanism of vomiting. Opinions of M. Magendie, and other physiologists, examined. Œsophageal vomiting. Abortion. Spasmodic strabismus.*

GENTLEMEN:—In the present lecture I bring to a conclusion the Nervous System and its Diseases; yet, how much remains unsaid. I have thought it right, however, not to occupy your attention unduly with a favourite subject. As I proceed in my investigations, I propose to lay the results before the profession as they may be established, so that your future reading will supply any defect in what you now hear.

1104. I proceed to treat of several other centripetal diseases of the true spinal system. I shall then lay before you some observations upon several affections which may very justly be designated centrifugal. You will remember I am not the first to employ these terms in medical language. I might have hesitated to do so; but with the example of Prof. Müller before me, I need not hesitate to use these very significant terms.

1105. The first subject of which I now propose to treat briefly is

VIII.—SPASMODIC ASTHMA.

I have already alluded to this subject.

The similarity between the croup-like disease, or the laryngeal asthma, and this, or the bronchial asthma, is most marked. A morbid state of the stomach induces both; both come on in attacks, and in the first sleep; both cease, as by a charm, from change of air; both are instances of reflected irritation: the difference consists in the closure of the larynx in the former disease, and its open state in the latter, a difference which is probably the cause of all the other differences between these two diseases.

1106. The simplest form of asthma is that immediately induced by taking some indigestible substance; or, perhaps, still more immediately induced by the inhalation of certain kinds of dust diffused in the atmosphere, as that raised by shaking a feather-bed, the powder of ipecacuanha, &c. The incident branches of the pneumogastric, or internal excito-motory nerve, are excited; the action is reflected by the medulla oblongata upon the motor branches, and, as I believe, upon the circular muscular fibres of the bronchial tubes. These tubes are contracted, and the phenomena of asthma are induced. A constipated state of the large intestine acts in the same manner through the incident spinal nerves. Contracted bronchial tubes explain all the phenomena: the dyspnœa, the urgent, rapid, imperfect bronchial inspiration; the protracted wheezing bronchial expiration; the bronchial rattles under the stethoscope, especially during expiration; the excited secretion of mucus, the cough; ultimately, the dilated air-cells, the dilated heart, &c.

1107. As certain additions to the atmosphere induce asthma, so certain others, as the smoke of tobacco, of stramonium, relieve the disease, and upon similar principles. As asthma is a morbidly excited state of the true spinal nerves, so remedies which subdue the action of that system, as the hydrocyanic acid, constitute our most prompt remedies in this disease. Swallowed, or inhaled, this remedy is invaluable, in this and in the cognate diseases, as the croup-like disease, pertussis, &c., &c., the first exciting cause or causes being removed.

1108. How singular is it, that ipecacuanha, taken into the bronchia should excite asthma, and taken into the stomach should induce another affection of the respiratory

system, vomiting. How does every step in this inquiry lead to new comparisons, new illustrations of disease. How short-sighted have been its soi-disant critics, its incapable judges.

1109. You cannot mistake asthma; remember that its attack is generally sudden; frequently in the first sleep. Trace it to its immediate cause; if this be an indigestible meal, give a mild emetic; if a morbid state of the intestines, give the warm water enema and a brisk purgative; if a north-east wind, or a dry atmosphere, imitate the genial south-west by diffusing warmth and moisture through the patient's room. A fomentation to the chest often does great good. Have recourse to the other remedies which I have mentioned; and then guard the patient against future attacks by teaching him to avoid its causes.

Some patients can breathe in London who cannot in the country; some in the country who cannot in London; some can breathe in the lowest room who cannot in the highest stories. Ascertain these peculiarities, and propose the plans which they suggest to you. I need not say how important it is to avoid the attacks of asthma; the mere momentary suffering of the attack is nothing compared with the emphysema of the lungs, the disease of the heart which repeated attacks induce.

1110. I must close these cursory remarks by one or two observations. Sudden death frequently occurs in cases of affections of the larynx, or the upper part of the trachea, during the operation of tracheotomy. The fear and sufferings of the patient add to the excito-motory actions of the larynx, and induces asphyxia. How important would be some more prompt mode of performing this operation. Such a plan I proposed long ago; it is to remove a portion of the integuments and of the trachea, at once, by a small steel cylinder, with cutting edges and a piston. Of this I gave a description to Mr. Weiss some years ago; the proposition has been allowed to remain dormant. Another observation is this: there is a case on record, and I think in the "Edinburgh Medical and Surgical Journal," in which a shot passed into the trachea, and eventually into a bronchial tube, as a person was drinking out of a bottle, which had been cleaned, as is usual, with shot; it induced asthma. This asthma ceased at once on one occasion, when the patient expectorated the shot. The rationale of this case is perfectly obvious to those by whom the actions of the true spinal system are understood.

Lastly: in some cases of chronic bronchitis we observe phenomena similar to those of the asthmatic seizure.

1111. In confirmation of the views given on this subject, I propose to make a series of experiments to ascertain the power of muscular action on the bronchial tubes, by the immediate and reflected action of galvanism. A glass tube will be fixed in the trachea, and this will be placed in blood-warm water; galvanism will then be passed through the water, and through the excitor and motor nerves.

1112. The next subject which I must introduce to your notice is that of

IX.—Vomiting.

No subject illustrates the special function of the true spinal, or excito-motory system so admirably. It is singular that Professor Müller, in his account of the actions of the pharynx, and of the sphincter ani, and of vomiting, does not once allude to these phenomena as being reflex and spinal, so little did this most acute physiologist understand of this subject before the publication of my Researches. The same remark may of course be made relative to the works of Mr. Mayo, M. Magendie, &c.

1113. I shall distribute my remarks on vomiting in the following manner:—

1. *Of Vomiting, as a reflex, spinal, Action;*
2. *Of the Mechanism of Vomiting;*
3. *Of Œsophageal Vomiting.*

I shall begin, then, by treating of

1. *Vomiting, as a reflex, spinal, Act.*

Professor Müller speaks of the nerves of the pharynx as those through which vomiting may be excited. This is a mistake; it is through branches of the trifacial distributed to the fauces that this act is excited, on touching these parts with the finger, a feather, &c. This fact I have proved by experiment. A friend of mine touched the fauces with an ivory knife; it immediately induced an incipient act of vomiting. He then carried the knife backwards, so as to touch the posterior part of the pharynx; no effect whatever was induced. A feather carried further down, instead of inducing vomiting, has actually been swallowed.

The velum pendulum palati, and points on the anterior and posterior parts of the tonsils are particularly excitable.

A singular effect is amongst the first phenomena observed. The cardia opens distinctly, and a little gas escapes into the œsophagus. Then the larynx closes, and the other associated movements of vomiting take place.

A disagreeable object seen, the motion of a ship at sea, or of a swing, a blow, or fall on the head, seem to act through the medium of the medulla oblongata; certain emotions probably do, the last by a sort of contre-coup.

In vomiting excited through the fauces, it is the trifacial which is the nerve of transmission; in vomiting induced by an emetic, by a renal calculus, or a gall-stone, it is the pneumogastric; and in the vomiting of early pregnancy or dysmenorrhœa, it is a spinal nerve which is the incident excitor nerve.

All these nerves convey the excitement ultimately to the medulla oblongata. This combines the action of the nerves which regulate the aperture of the cardia, the closure of the larynx, and the acts of expiration; but of this I propose to treat under the head of

2. *The Mechanism of the Act of Vomiting.*

1114. Two opinions have divided physiologists respecting the mechanism of the act of vomiting. It was originally and long thought that this act consisted simply in a sudden and forcible contraction of the stomach itself. Afterwards Bayle and Chirac, and more recently M. Magendie, considered that the stomach is inactive, and evacuated by being subjected to pressure by the simultaneous contraction of the diaphragm and abdominal muscles. It appears to me that neither of these opinions is correct. M. Magendie distinctly proves, by actual observation, and by the substitution of a bladder in the place of the stomach, that the contraction of this organ is not usually subservient or necessary to the act of vomiting. I refer to the interesting paper (Paris, 1813) of that eminent physiologist for the more full elucidation of this first question. I proceed to state such observations as appear to me to controvert the second, and to establish that view of this subject which I have myself been led to adopt. It is obvious, that if vomiting were effected by a contraction of the diaphragm, it must be attended by inspiration. If this were the case, the fluids ejected from the stomach would be drawn into the larynx and induce great irritation, events which have not been observed. These events are, indeed, effectually prevented by an accurate closure of the larynx, a fact observed in an actual experiment by M. Magendie, who makes the following observation:—"Dans le vomissement, au moment au les matièrs vomies traversent le pharynx, la glotte se ferme très-exactement." It is astonishing that this observation did not lead its acute author to see that, under such circumstances, a contraction of the diaphragm, unless the thorax followed precisely *pari passu*, was impossible. Complete vomiting has been observed, too, in cases in which the stomach had entirely passed through a wound of the diaphragm into the thorax, and in which it could not, consequently, be subjected to the action of that muscle. In some experiments, vomiting was observed also to take place, although the diaphragm had been paralysed by a division of the phrenic nerves, or its influence substracted by a division of its anterior attachments.

1115. This view of the subject is still further confirmed by facts, which I now proceed to state, which prove that the act of vomiting is an effort, not of inspiration, but of expiration. This is obvious enough, indeed, on a mere observation of the states of the thorax and abdomen during vomiting. The larynx is evidently abruptly and forcibly closed, the thorax drawn downwards, and the abdomen inwards.

Such, indeed, appears to me to be the precise nature of the act of vomiting, in ordinary circumstances. The contents of the thorax and abdomen are subjected to the sudden and almost spasmodic contraction of all the muscles of expiration, the larynx being closed so that no air can escape from the chest, and the two cavities being made one by the floating or inert condition of the diaphragm.

The mere mechanism of the act of vomiting differs little, therefore, from that of coughing, by which, indeed, the contents of the stomach are frequently expelled: the larynx in the former is, however, permanently, in the latter only momentarily closed; and there is, doubtless, a different condition of the cardiac orifice and of the œsophagus.

1116. It appeared to me from these views of this subject, that if an opening were made into the trachea, or through the parietes of the thorax, the effort of expiration constituting the act of vomiting would issue in expelling the air through these orifices respectively, and the evacuation of the stomach would be prevented, and I determined to submit the fact to the test of experiment. I took a little dog, made an ample opening into the wind-pipe, and gave a few grains of the sub-sulphate of mercury; the animal soon became sick. The first efforts to vomit induced a forcible expulsion of air through the orifice in the trachea. These efforts soon became very violent, however, and the stomach at length yielded part of its contents. It was perfectly evident that the violent contractions of the abdominal muscles pressed upon the viscera of the abdomen, so as to carry the diaphragm upwards to its fullest extent, and at this moment vomiting was effected. The act of expiration was so forcible that a lighted candle placed near the tracheal orifice was several times extinguished. In a second experiment a free opening was made into the thorax between the sixth and seventh ribs of the right side. the lung collapsed partially only. During the first efforts to vomit, air was forcibly expelled through this orifice, the lung was brought almost into contact with it; the stomach was not evacuated, but as the efforts to vomit became extreme, a portion of lung was driven through the thoracic opening with violence and a sort of explosion, and at the same instant the stomach yielded its contents.

1117. These experiments appear to admit only of one explanation, of one conclusion, that the act of vomiting is a forcible expiratory effort, the larynx being firmly closed, and the diaphragm perfectly inert. It must

be regarded as singular that M. Bourdon, by whom the action of the expiratory muscles, in their various "efforts," has been so well investigated, should have adopted other views of the act of vomiting.

1118. It is not intended to state, that the act of vomiting is simply such as I have described. There are many facts which appear to show that the œsophagus is not without its share of influence in this act, and it is plain that the cardiac orifice must be freely opened, for mere pressure upon the viscera of the abdomen will not, in ordinary circumstances, evacuate the contents of the stomach. To effect this open state of the cardiac orifice it is probably necessary that the diaphragm should, indeed, be in a relaxed rather than in a contracted state.

1119. A singular and interesting fact was noticed by M. Magendie, of which he has given no explanation. During the state of nausea which preceded the act of vomiting in some of his experiments, air was drawn into the stomach. I am disposed to think that this effect was produced in the following manner:—The larynx being closed preparatorily to the act of vomiting, an attempt at inspiration is made before the effort of expiration. In this attempt air is drawn into the œsophagus, the larynx being impervious, and it is afterwards probably propelled along that canal into the stomach itself; it is not improbable, too, that in some instances of vomiting, in which the action of the abdominal muscles was subtracted, a similar effort of inspiration has drawn substances from the stomach into the œsophagus which has eventually expelled them by an inverted action. Neither of these phenomena could result from any action of the diaphragm, and much less from contraction of the abominal muscles; but it is easy, by closing the larynx and attempting to inspire, to draw air into the œsophagus. A similar act, if very forcible, might draw a portion of the contents of the stomach through the cardiac orifice.

Such then, I think, appears to be the nature of the act of vomiting. How different is this act from one in which the diaphragm does indeed contract suddenly under similar circumstances of closure of the larynx, viz., singultus, the action of the diaphragm being an effort of inspiration; air is apt to be drawn into the œsophagus with considerable noise, and there is occasionlly pain, not only about the insertion of the diaphragm, but about the closed larynx.

1120. Since the publication of the preceding remarks in the "Quarterly Journal of Science" for June, 1828, I have been greatly interested by the following extract from the valuable report of cases in the Meath Hospital, just published by Drs. Graves and Stokes, in the fifth volume of the "Dublin Hospital Reports and Communications:"—

"A man about 40 years of age died of tubercular phthisis.

"The œsophagus, after passing through the usual opening in the diaphragm, was found to re-enter the thorax by another very large opening in the tendinous portion towards the left side. The stomach occupied the inferior portion of the left thoracic cavity, its cardiac and pyloric extremities both lying in the opening.

"The man vomited frequently while under observation in the hospital. Now, as the stomach was placed entirely out of the reach of being compressed by the contractions of the diaphragm, and as this contraction completely defended it from the influence of the abdominal muscles, it is clear that, in this case, vomiting must have occurred independently of compression, either of the diaphragm or of the abdominal muscles. This fact, worth a thousand experiments, completely decides the question, that vomiting may be produced by the action of the stomach itself, unassisted by any external compressing force, notwithstanding what Legallois and late physiologists have said to the contrary."—Page 85—87.

1121. The authors of the report do not appear to have seen the paper which I published in the number of the journal of the Royal Institution for April to July, 1828, the object of which was—first, to expose the fallacy, both of that view of the nature of the act of vomiting, which refers it to a contraction of the stomach itself, and of that other view lately advocated by M. Magendie, which refers this act to the simultaneous contraction of the diaphragm and abdominal muscles; and, secondly, to propose a new view of this disputed question. As this last view has never been controverted—as it has, on the other hand, been generally admitted—and as it alone explains the various difficulties which beset each or both of the other two, it may not be amiss to reproduce its broad outlines here, in connection with the interesting case of Dr. Graves and Dr. Stokes. They are these:—During the act of vomiting

1. The *larynx* is *closed;*
2. The *cardia* is *opened;* and,
3. All the muscles of *expiration* are called into action; but,
4. Actual expiration being prevented by the closure of the larynx, the force of the *effort* is expended upon the stomach, the cardia being open, and vomiting is effected.

1122. It is plain, from this view of the subject, that the thorax and abdomen become one cavity, as it were, the diaphragm lying loose and inert between them. It is also obvious, that it is quite indifferent on which side of the diaphragm the stomach may be placed, whether above, as in the case of hernia, or below, in its natural situation.

1123. The view of the act of vomiting which I have taken, appears to me to be

the only one which at once explains this act, as it occurs in the case of hernia of the stomach through the diaphragm, such as the one detailed by Dr. Graves and Dr. Stokes; and the experiment of M. Magendie, in which a bladder was substituted in the place of the stomach. The first establishes the fact, that the diaphragm, the second, that the stomach has no necessary part in vomiting. It remained, therefore, to show in what other manner the act of vomiting, and both of these facts, would admit of explanation. This is done in the manner already detailed; and the truth of the explanation is proved by two decisive experiments, related in the paper to which I have already referred. See § 1116.

1124. The next point I must treat of is that of

3. *Œsophageal vomiting.*

I have recently had an opportunity of watching the effort to swallow and the effort to vomit, in a patient with total obstruction at the cardia.

The effort to swallow was not to be distinguished from that in health, nor could the patient detect any difference, until the œsophagus being completely filled, the fluid ceased to descend beyond the pharynx, and flowed out of the mouth. The effort to vomit was also perfectly similar to that which takes place in health; the larynx was closed, an effort of expiration was forcibly made, and the fluids in the œsophagus were expelled as in ordinary vomiting.

1125. The stomach-tube was introduced repeatedly; whenever it reached the cardia, and so extended the œsophagus, an effort to vomit uniformly took place, as in the experiments of Legallois; at the same moment the fluids contained in the œsophagus were forcibly expelled through the tube.

1126. The whole of the phenomena in this case afforded an interesting confirmation of the views I had published on the mechanism of the act of vomiting, in 1828. In ordinary vomiting the abdomen and thorax become as one large cavity, the intervening diaphragm floating perfectly loose and inert between them, whilst the cavity of the stomach and of the œsophagus become equally one by the free opening of the cardia; an *effort of expiration* then takes place, and the stomach is evacuated through the œsophagus.

X.—Tenesmus and Strangury.

1127. I had recently a most interesting case of spasmodic stricture of the sphincter ani. The finger could scarcely be introduced. It was discovered that a calculus existed in the urethra; when this was removed the stricture immediately ceased.

1128. There is no fact so familiar as the retention of the urine produced by a ligature applied to hæmorrhoids; the cause and effect are removed together.

Tenesmus almost always implies the existence of strangury, and strangury that of tenesmus. They induce each other; they are *similar excito-motory* phenomena, affecting the exits of two organs.

Teething in children has produced both these actions, through a more remote arc of the true spinal system.

The last subject which I shall mention under this head is

XI.—Abortion.

1129. I have a number of facts which prove that abortion is frequently an excited act, excited through the spinal nerves of the rectum, and that its prevention depends upon removing and avoiding the causes of this excitement.

A frequent cause is a morbid and exciting state of the contents of the rectum. The death of the fœtus is another cause; as a foreign body it excites the contraction of the uterus.

The difference between the excited acts of the rectum and bladder, and of the uterus, is that in the latter the expulsors, the sphincter or the cervix, in the former, are the active organs excited to contraction; in the former the excernenda are frequently retained, in the latter they are expelled.

1130. I now proceed to notice another subdivision of these diseases, or

III.—The Centrifugal Diseases,

if this term may be allowed.

They are diseases of the reflex motor nerves.

1131. Spasmodic affections may arise from causes affecting the *excitor* nerves, the *spinal axis*, or the *motor* nerves of the true spinal or excito-motory system; the first and second have been noticed already. It now remains for me to treat of the third. The first of these is—

I.—Spasmodic Strabismus.

1132. I have already noticed the strabismus which arises from *paralysis* of cerebral and voluntary nerves, and some of the muscles of the eyeball. I now wish to draw the reader's attention to another form of strabismus, not hitherto distinguished from the former, and which I believe to be an affection of the motor nerves of the true spinal system.

1133. In the former case the patient can frequently move the eyeball fully, in every direction except one; at a certain point the eyeball stops, although the other eye continues to pursue an object placed and moved before it. This is the case with a patient at this moment under my care for attacks of sickness, with defective vision and motions of the eye.

1134. In spasmodic strabismus the motions of the eye may be perfect, except on certain occasions of excitement, or of disorder, or of intense application or of em-

ployment of the eye; the strabismus then becomes apparent, the eyeball obviously is *drawn* in one particular direction.

1135. In one interesting little girl, aged about three years, the strabismus came on whenever a stranger came into the room, whenever she was asked to read, &c.

II.—Spasmodic Tic.

1136. The next of these nerves is the *seventh*, or *facial*. So long ago as the year 1817, I published, in the "Edinburgh Medical and Surgical Journal," an interesting case, which is plainly one of spasmodic affection through this nerve:—

1137. Miss Inman, aged nineteen. Two years ago, in the winter season, the face became affected, during the course of one night, in the following manner: all the muscles of the right side of the face were drawn into a state of spasmodic contraction; the sensibility of the skin became much impaired, the contact of an external object inducing a feeling of numbness; there were a degree of swelling, and considerable pain; and a sense of rigidity was felt in the muscles of the right side of the neck.

1138. The muscular contraction was permanent, and very considerable; the right angle of the mouth was drawn downwards; the retraction of the integuments, the effect of muscular action, and usually observed extending from each nostril obliquely downwards, is, on the right side, very deeply marked; on the left it is seen in its natural state. The tongue, when protruded, is drawn a little towards the right side; the point of the nose is considerably so. The right eyebrow is drawn a little lower down than the left one; and two small dimples, the effect and evidence of muscular contraction, are seen immediately above it. A dimple in the chin is also distinctly marked, and is drawn considerably to the right of the mesial plane of the face. Articulation was, at first, very indistinct, and is still so in some degree; the letter *S*, especially, is pronounced with difficulty, and participates in the soft sound of *th*. There is no difficulty in deglutition; but considerable inconvenience occurs during mastication, from a tendency of the bolus of food to pass and collect in the right side of the mouth. On closing the right eye a degree of tightness is induced and felt at the right angle of the mouth; this tightness is *seen*, even when the patient speaks with the right eye perfectly closed. On drawing down the right angle of the mouth, by an effort of the muscles of this part of the face, the upper eyelid of the right eye is also drawn sensibly downwards, and the eye is partially closed. In the first instance the eye was closed with difficulty.

1139. The state of contraction of the muscles is seen much more distinctly, and the deformity induced is much greater, on speaking or laughing, than when the patient is in a state of tranquillity.

1140. At present the contraction of the muscles is much less than at first; the sensibility is perfectly restored. The diminution of the symptoms took place during the administration of electricity, the operation of blisters, and the exhibition of an emetic, followed by purgative medicines.

1141. This affection was considered by the patient as an effect of cold. The swelling and pain were deemed an attack of toothach, but without reason, as there is no decay of any of the teeth. Before and about the period of attack, pains were experienced in both arms and wrists, and were considered rheumatic. During two years previously to the accession of the affection described, this young lady had experienced some general indisposition, having been feeble, nervous, and subject to difficulty of breathing and palpitation of the heart. The catamenia had been somewhat irregular. The ankles were affected with œdematous swelling in the evening of each day.

1142. This case is deemed particularly interesting, as it establishes a distinct diagnosis between a *spasmodic affection*, and a case very similar in appearance, consisting of *paralysis* of one side of the face, a distinction which, it is thought, has been sometimes neglected. A further diagnosis, to which the practitioner must attend, consists in the distinction between a primary paralysis of the muscles of one side of the face, occasioned by the agency of internal causes, and a secondary paralytic affection, the consequence of pressure external to the brain.

1143. In the "Annuaire Medico-Chirurgical des Hôpitaux," published in 1819, there is (p. 406), an interesting case of a wounded facial nerve:—

1144. "On the 27th of February, 1814, Charles Leroux was wounded at the battle of Bar-sur-Aube. The ball struck him, from the distance of fifteen paces, on the left side of the face.

1145. "He felt but slight pain at the instant he received the wound. The only consequences which followed were a trifling swelling of the cheek, with a slight alteration in vision, shooting pains in the eyes, and a peculiar sensibility accompanying the act of mastication. Twelve days after the accident the wounds were completely cicatrised.

1146. "The most extraordinary circumstance of this case is, that when this man attempts to speak, laugh, or eat, in fact, whenever it is necessary to move the jaws, the sub-labial muscles contract involuntarily, and as if by sympathy. While the jaws are at rest, these muscles appear to be in their natural state, and the face offers no traces of change; but no sooner are the jaws moved, though very slightly, than the act is

accompanied with the most frightful grimace, of which the patient is unconscious. The countenance changes and becomes hideous, and it is hardly possible to recognise it. This alteration of the features is much greater on the left than the right side of the face. This phenomenon may, I think, be explained by the lesion of the sub-orbitar nerve. With regard to the sensibility accompanying the mastication, which, a month after the accident, was still felt, it must be attributed to the passing of the ball through the sub-maxillary alveoli, and to the shock resulting from it."

1147. For my own part, I do not pretend to have understood the case, which I have given § 1137, and which I observed and detailed merely as one of clinical observation and diagnosis. M. Beauchêne, the author of the second case, is absolutely in error in considering it as an affection of the sub-orbitar nerve.

I now lay before you a sketch of this spasmodic tic:—

1148. In this case the countenance is also drawn to the right side; but it is the eye of the *same* side which cannot be closed. It is distinguished by this circumstance. from *paralysis* of the facial nerve of the left side. In this there is a *spasmodic* affection of that nerve on the right side. It is a peculiar affection not discriminated from the former, and will be illustrated by the following case:—

1149. George Jefferson, aged forty, formerly a lamplighter, now a seller of fruit in the streets, was affected three years ago with general rheumatism, in the midst of which this singular affection of the muscles of the face came on.

1150. The two sides of the face are not alike; the left is nearly natural, but the right is affected with spasmodic contraction; the chin is drawn to one side and dimpled; the right angle of the mouth is drawn downwards; the right eyebrow is higher than the left. Sometimes there is a little rapid spasmodic action of the muscles.

1151. When he is told to shut the eyes promptly and forcibly, the distortion is tenfold; the right eye is drawn and only partially closed; the right angle of the mouth is drawn spasmodically downwards; the nose and the chin are drawn to the right side.

1152. He laughs, and bites perfectly on the left side. On attempting to open the mouth wide, it is obviously *tied* by the muscles of the right side. He cannot whistle; in the attempt to do so the mouth is drawn to the right side.

1153. He takes snuff through both nostrils indifferently; on sneezing, the left side of the face is chiefly distorted.

1154. The right side is a little benumbed in feeling; it is also colder, after exposure to cold, than the left.

1155. Besides these two cases I have seen several others; in one there was a defect of vision, with the spasmodic tic; in another the tic was confined to the outer portion of the orbicularis. The former was of the most extreme character; the face

being exceedingly distorted on each spasmodic attack. The latter was comparatively slight. The former probably arises from disease of the facial nerve *within* the cranium,—the latter appears confined to that branch of the facial *exterior* to the cranium, which supplies the orbicularis

1156. The *causes* of this affection are the usual causes of inflammation; the most frequent is exposure to a keen wind, either extremely cold, or with rain, or sleet,—a *coup de vent*, as it is termed.

1157. The remedies for this disease are unknown; in the severer case just mentioned, aperients and mercury have been fully tried in vain. I have proposed local depletion and counter-irritation, by means of the cupping instruments.

Recently I have seen great benefit accrue from the use of fomentations, and of liniment, and especially from a liniment containing the hydrocyanic acid.

1158. Before I leave this subject, I must say a few words upon *distortions* of the face in general; these arise from paralysis, and this may have its seat in the cerebrum, or in the facial nerve.

1159. The former of these is represented in the subjoined woodcut (Fig. 1):—

Fig. 1.

Fig. 3.

Fig. 2.

The eyelids of the right, or paralytic side, are closed by an act of volition, although not so perfectly as those of the unaffected side; the *sensibility* is generally diminished; the tongue is protruded *towards* the paralytic side, by means of the contraction of the unaffected side of the genio-hyoid muscle.

1160. Compare with these the cuts which I now present to you.

The first represents the seventh, or facial nerve, compressed by a tumour under the ear; the orbicularis is paralysed, and the patient is incapable of closing the eyelids. (Fig. 2.)

1161. The second is a representation of a similar affection in an infant; its mother observed, "it laughs and cries on the *right* side, and cannot close its *left* eye." (Fig. 3.)

1162. The *diagnosis* of these cases is most important, and I think you cannot fail in this point.

Gentlemen,—At the close of my last lecture, I expressed my intention, even *after* having seen the FOUR articles in the "Brit. and For. Med. Review," not to notice them. But when I saw the THREE others in the "Medical Gazette," I perceived that silence must be impossible. You will find my final reply to these disgraceful attacks, at the conclusion of my next lecture, in what may be regarded as a *preface* to these lectures on the Nervous System and its Diseases.

LECTURES
ON
MATERIA MEDICA AND THERAPEUTICS;

NOW IN COURSE OF DELIVERY
AT THE
WINDMILL-STREET SCHOOL OF MEDICINE.
BY
GEORGE G. SIGMOND, M.D.

VINUM—WINE—ALCOHOL.

WINE.—*Beneficial effects of wine when drunk in moderation. Different stages of intoxication; their effects. Evils of intemperance. Delirium tremens; its symptoms and treatment. Adulteration of Wines. Qualities of Port, Sherry, and Madeira. French wines and their properties. Effects of Champagne.*

GENTLEMEN:—I have not been able to give you more than a very cursory view of the different varieties of wine which the grape, in so many soils, affords; nor can I at present do more than point out to you some of the effects of wine and of spirits, as productive of disorders, as articles of diet, or as agents in the cure of disease. Although these, among other of the gifts of Providence, may, if indulged in with moderation and temperance, be a source of happiness and of joy to man, they become a cause of the most fearful afflictions to individuals and a calamity to nations, if they be indulged in to excess, or if there be an habitual abandonment to the sensual pleasure they may produce. Notwithstanding some persons of much reputation, of sound judgment, and even of acute observation, have condemned, under every circumstance, the use of fermented liquors of all kinds, and have in the most decided language forbade their administration, yet there can be found no substitute for those agents so invigorating, nor any that can enable man to sustain the mental and bodily labour which the artificial habits of society so constantly demand.

Temperance and moderation are virtues essential to our happiness, and they are strictly to be enforced, but a total abstinence from the enjoyments which the bounteous hand of Nature has provided, is as unwise as it is ungrateful. The rigid laws that have been lately so loudly preached, and so widely disseminated, are not adapted to every state of society; as far as their interdiction against that daily stimulus, in which so many even of the most intellectual men indulge, who at their meals drink such a quantity as just stops short of that inebriation which they would blush to be guilty of, I most heartily join, and I firmly believe that nothing can be more destructive than the daily pleasures of the table, where indolence, caprice of taste, and even gluttony, are combined with an excess of wine. If, on the one hand, disease and sorrow attend upon the abuse of the alcoholic liquor, innocent gaiety, additional strength and power of mind, and an increased capability of encountering the ever-varying agitations of life, are amongst the many good results which spring from a well-regulated diet, in which the alcoholic fluids bear their just proportion.

As is the case with the different stimuli of which I have had to speak to you, there are three stages of action upon the human frame of this class of agents; during the first there is arterial acceleration, during the second venous retardation, and the last cerebral compression. As long as the first state exists, wine is, in a state of health, to be continued, but the moment that an approximation to the second occurs, it is to be avoided, and he that allows himself to be led on to the last, places himself on a level with the brute.

The first stage is marked by a gradual and agreeable diffusion of warmth over the whole body, by a gentle increase of the muscular power, by an exaltation of the nervous energy; the countenance becomes full of animation, there is a flush upon the cheek, a brilliancy in the eye, all the functions of life are more actively performed, the circulation acquires a febrile ryhthm, the cutaneous warmth is increased, the pheno-

mena of excitement become marked; the mind participates in them, wit, joy, gaiety are excited, or if mirth, or imagination, or any marked feeling, be predominant in the mind, it is displayed, and exuberantly indulged in. If the stimuli be now continued a degree of torpor is induced, both mental and bodily; perception is blunted, there is a general languor, giddiness, an obscurity of vision, incoherence of ideas, and incapability of exercising volition; a depression of spirits, nausea, sickness, with vomiting, occur, until the third stage supervenes, when a peculiar state between sleep and stupor is observed, to which the term somnolence has been applied. Accordiug to the quality of the liquid, the habits of the individual, and the source from which the spirit has been fabricated, will be many of the symptoms produced; certain morbid states of the brain render the effects much more lasting, and sometimes much more quickly visible.

Numerous are the mental and bodily afflictions to which those who allow themselves to be often the subject of these cerebral congestions are liable. The most powerful mind becomes enfeebled, the judgment, the memory, the imagination, the perception, all that marks the intellectual character gradually fade away; each successive debauch leads nearer to imbecility and the loss of reason, whilst all the gentler feelings that adorn life and give domestic happiness to those most loved, are exchanged for caprice, for irritability of temper, for callousness of heart, and as has been most beautifully painted in the allegory of the Sainted Dervise, who, from intoxication, step by step, was led to the commission of crimes, at which the soul shrinks back with horror. Soon is the best of men degraded into the most abject of creatures, by that which, if moderately taken, dispels sorrow, invigorates the mind, and is a grateful cordial in pain and in disorder; anguish and torment, too, of the most frightful kind afflict the body of the sensualist who indulges in habitual intoxication. The liver cannot carry away the carbon which is deposited by the wine, it becomes tuberculated, indurated, all the symptoms of the most aggravated morbid alteration of this viscus are soon observed, and they are most difficult of cure, and mercury, the most appropriate remedy, is in itself another cause of disease; the very means of cure is an enemy, and demands the utmost skill in its application. The kidneys, called upon to relieve the brain from threatened danger, take on, during wine or spirit drinking, an increased secretion, and this should always be an indication that more wine is dangerous, and directly this hint is given the indulgence should be discontinued; these organs at last become inflamed, indurated, or they even suppurate, whilst the vessel, which Nature has placed as a reservoir to receive the fluid, distilling, drop by drop, from the kidneys, the bladder itself becomes diseased; its attempts are at first to defend itself from the acrimony of the fluid which falls into it, and hence a mucous fluid is poured forth, which soon becomes a catarrh, or it, no longer able to bear its inordinate stimuli, is highly irritable, will not retain fluid, and an incontinence of urine is the result; the viscera which assist digestion are gorged, and hence arise indurations of the pancreas, the spleen, the mesenteric glands; at last the stomach becomes enfeebled by the constant efforts at vomiting, by its sympathy with the brain, and though it is generally the last viscus that undergoes organic change, its pyloric orifice becomes indurated; but long before this, and generally throughout the whole career of the intemperate, the nausea, the loss of appetite, the whole train of symptoms of deranged digestive organs, have clearly shown how much this organ suffers from an undue use of these liquids.

The constant determination of blood to the brain, and the consequent retardation there, not only produces momentary apoplexy, but that state from which recovery is impossible, for extravasation occurs. Portal has an interesting chapter upon apoplexy which follows either during or immediately after a meal. He observes that intoxication may produce apoplexy, but thinks that it is more frequently caused by a long continued abuse of intoxicating liquors than by a temporary debauch. He points out how gradually the moral faculties are enervated; how soon tremors of the limbs then follow, stupidity, somnolency, and at length true apoplexy. Lieutaud gives an instance in which, after a fit of intoxication, a man died of apoplexy, in whom the vessels of the pia mater were found in all parts aneurismatic and varicose, the left anterior vessel containing as much grumous blood as would fill a common sized spoon, and the right ventricle containing about half the quantity of blood, which was somewhat more fluid; but almost all authors who have written on apoplexy have furnished us with instances of apoplexy, both suddenly upon a meal or debauch, and brought on by habitual indulgence. The bloated face, the purple nose, the blotched skin, the bloodshot eye, the host of papulous, and pustular eruptions, the loss of hair, the increased secretions from the mucous membranes of the nose, the hoarse voice, the jaded and the haggard look which bespeak the drunkard, may even harass him who does not actually intoxicate himself, but has daily potations beyond the limits of good sense and judgment. He who is "maudlin" in his cups, and who sheds tears, or exhibits what the phrenologists call the organ of veneration, must be very careful how he indulges, for his termination will most pro-

bably be apoplectic. The secretion of tears proves, that the brain takes that step to unload the gorged vessels; but that power is soon lost. He who becomes quickly angry is also a subject for apoplexy; whilst the individual who is depressed, anxious, and melancholy upon such occasions, is likely to become paralytic. Varicose veins are often the result of much drinking, for this is one of the means which nature uses in her attempt to relieve herself; for you must remember that the vis medicatrix is particularly alive to prevent mischief from the inordinate stimulus. Every symptom that presents itself to your observation, after the stage of arterial excitement, is but the anxious endeavour of the system to relieve itself; and, indeed, all the varied train of diseases which arise in the good liver are generally but attempts towards this end, and you must follow up every indication which is pointed out to you for relief from the stimulating poison still rankling in the veins. Among other circumstances to be remembered by you when attending an habitual lover of alcoholic liquids is, that there is on the one hand a frequent tendency to gangrene, and on the other, that if you suddenly take from an individual long habituated to fermented liquors, his usual stimulus, you can find no substitute, excepting on some occasions opium. Of that extraordinary phenomenon which has excited so much attention, the sudden combustion of a dram-drinker, in apparent good health, I can here only state, that the numerous facts on record leave no doubt that persons, who have been notorious for their habitual and excessive use of spirituous liquor, have engendered within themselves a gaseous fluid which has taken fire; that they have been consumed in a most extraordinary manner, leaving behind little traces of their body, although we are aware that, under ordinary circumstances, animal matter is by no means easy of combustion.

There is a most frightful malady consequent upon the abuse of vinous and spirituous drinks, which has been carefully traced and minutely delineated by some of the most eminent of the members of the medical profession, called delirium tremens, which bears with it a most melancholy train of symptoms, which is closely allied to some of the most aggravated forms of disease which the sad catalogue of human afflictions presents to us.

Some time previous to the development of the worst features of this disorder there are observed weakness, languor, emaciation; there is no appetite for breakfast or for dinner; there is a peculiar slowness of the pulse, coldness of the hands and feet, a cold moisture over the whole surface of the body, cramp in the muscles of the extremities, giddiness, nausea, vomiting; to these signs succeeds a nervous tremor of the hands, and likewise of the tongue; the spirits become dejected, a melancholy feeling pervades the mind, the sleep is short and interrupted; this may constitute the first stage, after which a second comes on attended with the highest degree of nervous irritation; mental alienation is its marked feature; there is great restlessness, a constant excitement, objects of the most frightful nature are present to the imagination, the eye acquires a striking wildness, the individual cannot lie down, he fears suffocation, he talks incoherently, he fancies he sees faces of extreme hideousness before him, beings enter into a conspiracy against him. Dr. Pearson, who has written ably on the subject, witnessed a very distressing incident of a patient who, for a considerable time before his death, imagined he saw the devil at the ceiling above his bed, and as the disease, which terminated rapidly, increased, he fancied the evil spirit approached him with a knife to cut his throat, and he actually expired making violent efforts to avoid the fatal instrument.

When the delirium commences sleep no longer occurs. This may be considered as the pathognomonic symptom of the second stage; if after three or four days duration this stage is not followed by a profound sleep, from which the patient awakes refreshed and capable of bearing the proper remedies, the third or fatal stage very rapidly supervenes; the pulse increases in rapidity, it is like a thin fine thread, the hands tremble, and gradually their tremor is followed by that of the whole body, the mind is highly excited, the muscles are convulsed, great struggles ensue which are attended with copious perspirations, then supervenes the train of symptoms which are usually observed when typhus is the termination of life.

This division into three stages has been observed by nosologists, and they have often drawn minute pictures of the incursions of such a disorder, but sometimes it bursts forth after a debauch with tremendous violence, and in a most unmanageable form; it is sometimes marked by the individual exhibiting furious delirium, irritability of a most extravagant character, the eyes become ferrety, the pulse rapid, the perspiration enormous and the want of sleep is almost painful even to the attendant; sometimes the paroxysm is of a melancholy kind; the appearance of the sufferer is very striking, from his total helplessness, from his incoherence of ideas, and occasionally refusal to drink, which seems to produce a constant internal struggle.

Opium is the great source of reliance in almost every state of these attacks, but bloodletting, however much inflammatory action may appear to indicate it, is, in a vast proportion of cases, most objectionable, blistering, cold effusion, and, above all, the

straight-jacket, and restraint should be avoided; the disease requires gentle treatment, and when recovery has taken place the greatest care is requisite; abstinence from all vinous fluid must be most rigidly enforced; a second attack, if it do not quickly destroy life, will most probably lead to insanity, hopeless, helpless, and unmitigated by the pity of the world. The quantity of opium that may be administered is very great, forty grains have even been given in the course of the day, and four hundred drops in five hours, for sleep must be obtained at all hazards, and sometimes after the most violent paroxysms the patient has awoke perfectly rational. But these sad effects of wine and spirits need not prevent the due and proper employment of these blessings, nor need they deter any one from seeking those convivial enjoyments in which the delicacies of the table are blended with intellectual excitement. Good unadulterated wine is an admirable companion, but the difficulty of finding it, I am afraid, daily increases; and I greatly fear the variety of deleterious compounds substituted for the juice of the grape is better understood now than it ever was by some of those who are interested in practising frauds upon the community; it has become almost a branch of science. Probably if the same plan was followed as Sir John Rainswell, the Lord Mayor of London, instituted, in the year 1426, we should be relieved from some of the most pernicious trash that ever was concocted. This excellent magistrate caused some wine to be examined, and, finding it very impure, he very properly ordered all that belonged to the merchant, to the amount of one hundred and fifty butts, to be poured into the kennel. Charles the Second made some excellent enactments. His physician, Dr. Tobias Walker, seems to have understood the subject well; he inculcated the doctrine, that wine was the best preventive of sickness, and undertook to prove the possibility of maintaining life from infancy to old age without sickness by the use of wine. What our great essayist wrote many years since is much more prevalent now than even then. Addison, in the "Tatler," says, "There is a certain fraternity of chemical operators who work underground, in holes, caverns, and dark retirements, to conceal their mysteries from the eyes and observation of mankind. These subterranean philosophers are daily employed in the transmutation of liquors, and, by the power of magical drugs and incantations, raising, under the streets of London, the choicest products of the hills and valleys of France; they can squeeze Bordeaux out of the sloe, and draw Champagne from an apple. Virgil, in that remarkable prophecy,

Incultisque rubens pendebit sentibus uva,
The ripening grape shall hang on every thorn,

seems to have hinted at this art, which can turn a plantation of northern hedges into a vineyard. These adepts are known amongst one another by the name of wine brewers, and, I am afraid, do great injury, not only to her Majesty's customs, but to the bodies of many of her good subjects. It has been proved, by analysis, that some Port wine contains about one half its bulk of pure brandy, and that every time a man drinks two bottles of strong bodied Port he drinks one of brandy; yet how many are there not content with this quantity. Sir John Sinclair gives us an instance of a Mr. Vanhorn who daily, for twenty-three years, drank his four bottles; altogether thirty-five thousand six hundred and eighty-eight bottles; and, as our guide to longevity, Sir John quaintly observes, "in the course of his potation, he resembled a cellar more than a man, for there are many cellars that never contained what this man must have done, namely, fifty-nine pipes of Port." I cannot now dwell upon the subject of adulteration of wine. I have had occasion to point out to you many articles of the Materia Medica that are employed for flavouring, colouring, and correcting wine, that are actually poisons. I have more particularly referred you to Sir George Baker's dissertations on lead, and I must now recommend to your perusal a paper in the "Philosophical Transactions," by that distinguished chemist, Mr. Brande, in the year 1811.

Notwithstanding their containing so large a proportion of alcohol, Port, Sherry, and Madeira are the wines best adapted for the peculiar habits, and, generally speaking, for the constitutions of the inhabitants of this country; the lighter and milder wines being occasionally taken by those who indulge in the more refined delicacies of life. Our cookery demands some degree of additional stimulus; the plain roast and boiled meats of this country are very often difficult of digestion; the stomach is more called upon to exert its energies, than upon those preparations which, in France and in Germany, have already undergone, in the culinary apparatus, a share of operation by heat and by moisture. Port, and Sherry, and Madeira, all assist digestion; they impart warmth to the organs; they cause an additional determination of arterial blood to the brain, so that the nervous energy is increased; they become useful tonics, and their astringency is principally exercised upon the muscular fibre; the excitement they cause is of a different character from the Bourdeaux, the Burgundy, and the Champagne, for they do not so immediately affect the brain. These latter wines are rapidly carried into the circulation by imbibition by the vessels of the stomach, whilst the stronger wines produce more local influence upon the digestive organs; they are not too rapidly absorbed, nor do they require the counter-stimulant of coffee. Those who

drink the very light wines of France are quickly obliged to have recourse to the infusion of this berry, both for the purpose of assisting the stomach and for preventing the injurious effect upon the brain of the light wines.

It may, at first, appear to you somewhat anomalous that the weaker wines would more instantaneously, though not so permanently, affect the head than those which contain such a greater proportion of alcohol; but this arises from the great celerity with which diluted alcohol is drank in by the imbibing vessels of the stomach, and carried into the great channel of the circulation, as you will observe by the quickly-excited action of the kidneys, and the large quantity of fluid that is very rapidly excreted when diluted alcohol drinks are taken. These organs will take on their action from a small glass of wine and water, yet show no mark of increased energy from a bottle of Port, and the cerebral excitement will, in many instances, be very nearly in the same proportion.

The system now adopted, in imitation of the French custom, of taking very strong coffee after wine, though so very agreeable, is injurious, if the wines taken during the meal have been Port, Sherry, and Madeira, but not so if those of a lighter quality have been drank. Great excitement attends upon this indulgence, for coffee has a great influence upon the stomach, and likewise upon the brain. Watchfulness of long duration, with a feverish reaction, are its immediate effects; but its distant ones are more upon the extreme capillary vessels of the surface of the body, which it seems to constringe, and it affects the skin, to which it gives a peculiar harshness; and it has been said, by some of the French writers, to give it colour, and the sallowness of the Parisian has been, by more than one medical author, ascribed to the great addiction to coffee.

Every individual differs so much in constitution, that he should himself observe which of the three wines, most commonly consumed in this country, is most beneficial. Sherry and Madeira are certainly, under ordinary circumstances, the best, for Port contains gallic acid, which is not serviceable to all; the liver becomes easily affected by it, for it inspissates the bile, renders it sometimes so thick as not to mingle with the mass already acted upon by the stomach, expelled from it, and ready, by the aid of the bile, to be ejected from the system. Hence, in any affections of the lower part of the intestinal canal, the wine of Oporto does much mischief. The aroma, the slight acid of Madeira, render it the wine for early life; the young and the weak may drink of it frequently; the old and the robust more sparingly.

Sherry is an agreeable stomachic, and has little or no acidity: the Amontillado is the best of these wines; this is the wine which is best drank during meals. It has been believed, in consequence of some observations made by Mr. Abernethy, that during eating there should be no drinking; and, certainly, this rule, in many diseases of the digestive organs, is important. The due administration, however, of the fluid and solid matter is absolutely necessary for healthy action; I do not mean large and copious draughts of any fluid whatever, but sufficient to stimulate the salivary glands into their proper secretion, and also enough to propel the already digested mass out of the stomach. A gentle stimulus of three or four glasses of wine during a meal, and these either of Sherry or Madeira, is the common habit of this country, and the general state of health enjoyed by those who do not trespass further upon the limits of moderation, proves its propriety. After the meal, when some little time has been given, two or three glasses of Port produce no ill effects. Some individuals drink their wine after dinner, which I do not think so serviceable, for the stomach becomes suddenly excited and its action is hurried, whilst, on the other plan, it slowly and gradually receives its stimulus, and hence acts with uniform vigour. The occasional glass of Burgundy, or of Hermitage, and one or two of Champagne, during dinner, is admirably adapted to the increase of social enjoyment; and, if not a part of the daily system, becomes a most valuable assistant to health at the season of the year when the body and the mind are more actively employed. During the winter months, the stronger wines are necessary for the preservation of an equable state of animal heat; but during the spring, when the lengthened day, with its stimulus of light and of heat, calls the active spirit that animates the human body into more decided action, then do the light and luxurious wines more naturally recommend themselves to our habits.

The commencement of a dinner with oysters is a very favourite system of the French, and certainly the salivary glands are excited by this delicacy; after which a glass of Sauterne or Barsac, or White Hermitage, is recommended. The first course is associated with Burgundy of the least estimation; the second, with the higher class, the St. George, the Chambertin, the Romanée; then follow the stronger wines of Dauphiny, the Cote Rotie, the Hermitage, then the Bourdeaux or Claret; with the sweets come the Rivesaltes, the Lunel, the Frontignan, and occasionally a glass of Malaga, or of Sherry, is at this time taken. The aromatic Mocha berry then gives its signal for a termination of the feast, when, in the language of the French gourmand, "Folly produces another bottle; the silver froth rushes, like a boiling spring, and carries the cork to the ceiling; or the Arbois is produced, and unites

the sweetness of Condrieux with the sparkling of the impetuous Ai; it is then only that the wine-drinker can enjoy, in diamond glasses, the exquisiteness of veritable Tokay."

Our lovers of good cheer can have less of the light wines, for few of them bear the passage from Dover to Calais, and hence our repast of luxury usually takes a different turn. The glass of Madeira, or of Sherry, after soup, a glass or two of some of the Rhenish wines, one or two of Champagne, a glass of Port after cheese, one of Madeira after dinner, three or four of Port during the dessert, a cup of coffee and a glass of liqueur, are the orthodox habits of the luxuriant. We do not possess a standard author on "the art of drinking wine." Still some rules are found to be necessary for the maintaining a pretty general state of health. There are those who heedlessly mix ale and porter with their wine, and, on many occasions, inflict upon themselves much future mischief, for the body becomes quickly bloated, and an inordinate quantity of fat is always deposited in the cellular substance of those who drink these products of fermentation at the same period.

The Burgundy wines are the first in the world; the genuine Chambertin is one of the most wholesome, but the common wines are too often substituted for it; few, however, but those who have been long habituated to them can discover the difference in them, and very seldom do they find their way into foreign countries. They are duly prized on the spot, and the generous Richebourg, the delicious Romanée, and the high flavoured St. George, are known only to those who visit the land of their growth. It is to the soil in which the grape grows rather than to the labour of the man, that these exquisite wines owe their excellence: they produce no bad effect, though it is said a long continuance in their use is apt to cause some degree of constipation, and some of these wines are known to give a black colour to the biliary fluid.

Of all the wines of France, none deservedly hold so a high rank as those of Champagne, and none where the constitution is sound, are more healthy; yet, strange to say, one hundred and twenty-eight years of discussion were necessary for the physicians of France before they came to a decision that they were not the cause of gout. In 1652, the School of Medicine of Paris began a most violent controversy, and in the year 1788, the decision of the faculty was publicly given, that Champagne was the finest wine of France. The public, however, had not waited for the verdict, but had given its testimony in favour of the delicious wine, by enjoying all its rich qualities, and it has ratified the judgment of the learned doctors by drinking the wine with great avidity.

Many judges declare the Champagne best that does not *effervesce*; still no quality of wine is so healthy as that which sparkles, and the taking the contents of the glass whilst the action is going on is of some importance, in many states of the system. The carbonic acid gas that is evolved is quickly imbibed by the stomach, and assists very much in reducing the blood when it is highly arterialised, and hence incapable of giving to the liver that quantity of carbon which the venous blood should contain. It is a wine peculiarly adapted for females, on this account: there are particular moments at which venous blood should circulate in their veins more highly carbonised than usual.

The slight excitement of the cerebral system that is produced by Champagne is very transient, nor is it without a useful effect occasionally; but of all the dreadful states that intoxication can produce, none are so terrific as those that occur from drinking of this wine to excess. The state of congestion of the blood in the brain is such, as to give reason to fear that sudden death may occur, for extravasation is the result. Various phantasies, connected with the organs of sight, arise in the minds of those who have taken inordinate quantities of this wine; this may be derived from the partial effusion or pressure of blood on the choroid coat. The sense of hearing, too, becomes confused; and also the touch is affected, and where delirium tremens has occurred in Champagne drinkers, it has almost always been accompanied by a belief that strange sights are seen; that conspirators are heard plotting, or that animals are crawling over the body. Champagne has the effect of causing uric acid to be deposited; and whether this, under the shape of red gravel, is to be considered an effort of nature to expel a formidable enemy, or whether it be itself a disease, is a subject which may admit of much discussion, into which I cannot now enter.

CASE OF

LARYNGEAL ASTHMA*,

OR

SPASM OF THE GLOTTIS,

WITH OBSERVATIONS.

By THOMAS HENRY BURGESS, M.D.

JULIA M., an infant between six and seven months of age, of an active constitution, and nervous temperament, and born of parents

* If the word *asthma*, from the Greek "*ασθμαζω*," signifies a difficulty of breathing; and if that difficulty of breathing is produced by a spasmodic stricture of the bronchial vessels spreading from thence to the muscles of respiration, as we are informed by Floyer, Hoffman, and Cullen, we presume that we are perfectly justified

similarly constituted, was attacked with that disease peculiar to infants, and variously designated by authors, — Millar's asthma, crowing inspiration, spasmodic croup, &c. &c., in January last, to such a degree, as to threaten immediate suffocation.

The infant, from its birth up to the accession of this disease, enjoyed perfect health; but it was observed from its earliest infancy to catch, or rather hold its breath, when crying, which was attributed by the nurse to passion. However, this symptom was not paid any attention to, and appeared in the nurse's eyes of no importance whatsoever, for when the child's health was inquired after, the nurse usually observed, that she was remarkably well in every respect, but she was very passionate. It is to be observed, that the mother's milk did not flow for several days after the birth of this child, that the infant was fed with the spoon during this period, but from then until she was three months old, the mother continued to suckle her, being at this time compelled to give up nursing, in consequence of ill heath, and from that period to the present, the child has been brought up by spoon-feeding alone. I may here state, that, a few days after birth, the *thrush* appeared, and passed away in the space of forty-eight hours, without having occasioned the slightest uneasiness to the little patient during its progress, although there was a considerable quantity of flaky mucus passed off by stool, still the disease was remarkably mild, and did not appear to influence her health in the slightest. The infant was vaccinated twice during the period she was nursed by the mother, and without the slighest apparent effect, not even producing a blush in the vicinity of the punctures; she was about six weeks old when vaccination was first attempted (the small-pox being prevalent at the time), and ten the second time. The child was frequently observed, after taking food, and without the slightest exertion, to throw up from the stomach a water brash-like fluid; this sometimes disappeared for weeks, and then returned as before. Nothing worthy of observation presented itself in the state of the child's health, from the time of its being weaned until it was five months old; the change of food produced no effect whatsoever at the time, at least, no apparent effect; she was naturally costive, even from birth (her parents being of the same habit), and this derangement was neither increased or diminished by the change of nutriment consequent on her being weaned. But it may be here noticed, that, between the first and second vaccination, an immoderate flow of saliva commenced, saturating several cloths daily, and continued until the infant was nearly five months old; it then became suddenly suppressed, and without any apparent cause whatever. The child's health during this period was, as before stated, remarkably good. It is worthy of remark, that from the time when the flow of saliva first commenced, until it totally disappeared, the holding or catching of the breath *never showed itself*, and led the nurse to suppose that her baby had got over her "*passion fits*," as she was wont to observe. All seemed going on well with the child, who being naturally quick, was increasing daily in liveliness and vigour. On Christmas day, the over-fond mother thought, as her baby was looking so remarkably well, and seemed in the best spirits possible, that she would give her a "morsel of plumb-pudding," which she avers was not as large as a nut, but it appears was saturated with sherry wine. However, the child seemed nothing the worse of this for a few days, according to the nurse's account. On Friday, the 5th of January, remarkable for the dense fog which immediately preceded the severe frost, the child was observed to be particularly uneasy and restless, and this being supposed to have originated from derangement or irritation of the bowels, *hydrargyrum cum creta*, gr. iij., were ordered to be given at bed-time, to be followed in the morning by a teaspoonful of *castor oil*. This appeared to have the desired effect in giving the child relief, and in quieting her restlessness, and for the next week appeared in very good health. Just at this period the profuse flow of saliva ceased, and the frost set in with great severity. On the 10th of January, the child was observed again, and for the first time since it was weaned, to "hold its breath," as if from passion; this appeared twice during that day, and still without occasioning any alarm to the parent or nurse; it will be recollected that this day (Wednesday, the 10th of January) was the first of the severe frost. On the 11th there was a tendency to catch the breath observed, but it did not actually occur; the child's bowels were opened by medicine twice or three times during that day. On Friday, the 12th, the inclination was still stronger than on the previous day to hold the breath, and a stifled passion-fit did occur during the evening of this day. On the 13th nothing remarkable presented itself, excepting the child's head being unusually hot. This being again attributed to intestinal irritation, rhubarb and magnesia was administered to the child at bed-time, with apparent benefit.

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in calling this disease *laryngeal asthma*, which is merely distinguished from the former, by the seat of the *spasmodic constriction* being removed from the bronchial vessels to the *larynx and its muscles*. Besides it removes all possibility of confounding the disease with croup.

On the 14th, the head was still above the natural temperature, but nothing else was observed; this day the weather was extremely cold, snowing all day. On the following morning the child awoke with a crowing fit, for the first time restraining her breath for near half a minute, and alarming the nurse, for now she observed the infant's face become congested, and a blue rim appeared around the margin of both lips during the fit. However, the child returned to her natural state in a few moments after, and, seeming nothing the worse of what had happened, it was again overlooked, as being of little moment. In the afternoon of this day, another fit came on as the child was sitting in its mother's lap, which the latter attributed to passion, in consequence of her sitting down in place of walking about, this being the child's favourite amusement; this was also overlooked, and the mother only observed, that the child should be broke of this evil habit in time. A third fit came on as the child was being undressed this same evening, but disappeared almost instantaneously on her being raised to the erect position. There were no symptoms of teething present, the child was not irritable in the slightest manner, and, excepting this peculiarity, seemed in the best possible health. On the 16th, a day of severe frost, so much so that the water was frozen in the basin of the child's apartment, although a fire was kept constantly burning there, no fit appeared on waking in the morning, and during the whole of this day only one mild attack came on; but the child's head was observed to be extremely warm, in consequence of which the mother was led to take off the cap for awhile, that the heat might subside, thinking that the extreme cold of the atmosphere would soon reduce its temperature. But this was not of the slightest avail, although persisted in for two hours, and the mother then gave the child a powder as before, containing rhubarb and magnesia, which produced two motions, and considerably abated the inordinate heat of the scalp. On the morning of the 17th, the child had a mild paroxysm as it was being dressed, this was about nine o'clock; there was an interval of two hours between the first and second fit, the latter being more severe than the former; another fit, still more severe than the two previous, appeared after the lapse of one hour, and the nurse, supposing it to be the effects of passion, attempted to subdue it. The disease again returned in or about half an hour after the last attack, and was repeated every half hour until two o'clock; at this time it assumed a much more serious aspect, and the fits recurred in quick succession (the intervals between each being about ten minutes), continuing in this state for the space of an hour at least. The family medical attendant saw the infant in one of those fits on this day, and for the first time. He had not seen the child for two months before, and on looking at the head, thought it very much enlarged; it was also considerably above the natural temperature on this day, which led him to think those "fits" were owing to effusion at the base of the brain, and were probably the precursors of convulsions, which he said was to be obviated by the timely application of leeches behind the ear, by the use of the warm bath, and by aperients, such as hyd. c. creta, in two grain doses, all of which was adopted on that evening. It is worthy of observation, that a few moments before the leech was applied, the child had a severe attack of the disease while sitting quietly in the nurse's lap; that on the application of the leech the child screamed violently from the pain of its bite; and during this time not the slightest symptom of the disease appeared. This exemption from the disease was remarkable throughout this case, whenever the child was irritated so as to scream violently; and on this and other peculiarities we purpose commenting, after detailing the facts of the case. From the difficulty of stopping the bleeding of the leech-bites, the infant lost more blood than was intended; still the heat of the scalp continued unmitigated; but about two or three hours after the administering of the hyd. c. creta (the nurse by mistake having given two powders instead of one), a copious evacuation was produced, which succeeded in diminishing the abnormal heat of the head, that had now continued for thirty hours. After the hæmorrhage ceased, the infant fell off into a tranquil sleep,—the sleep of exhaustion, and which continued undisturbed for six hours; when the child awoke from this slumber it was unusually restless, but the disease did not appear on her waking; the head gradually resumed its former morbid state of heat, and a throbbing of the fontanelles was particularly evident. The medical attendant ordered the head to be uncovered during the day and the body kept cool.

I saw the child in a mild fit on this day; but thought the disease was totally unconnected with any cerebral affection. I stated my opinion, that it was a nervo-laryngeal affection, probably spasm of the glottis; that the exciting cause was derangement of the alimentary canal, arising from costiveness. I lanced the gums immediately, in case dental irritation was a cause of the disease, passing the instrument as deep as the maxilla, but there was not the least appearance of teeth, the child being now near six months old. During the two following days, there was no recurrence of the disease, but about two o'clock on the third day there was a severe fit of crowing.

There was no apparent cause for this attack, and it came on whilst the little patient

was sitting quietly with its nurse. I saw the child during this fit, and was convinced that it was a well-marked example of the disease commonly called the "*crowing inspiration of children*," &c, and of a *purely* nervous character. Any individual who had once seen this affection could never mistake it again for any of those diseases incidental to the infantile age. On the 22nd I had a consultation with Dr. Marshall Hall respecting this disease, when it was agreed that if possible the child should be provided with a young and healthy nurse; and if this could not be acquired asses milk might be substituted; that the gums were to be freely lanced at least once a week, and the bowels kept regular by mild aperients. Dr. Marshall Hall did not at this time see the child in a fit of the disease, but from the description given was convinced of the existence of the affection under consideration; the warm bath was also recommended every other night, and strict attention to the antiphlogistic plan as regards nourishment. By this treatment the disease was warded off until the evening of Monday, the 29th, when the child had a very severe attack, bordering on convulsions; she was immediately put into a warm bath, which perfectly relieved her for the time being; and after taking a powder containing rhubarb and magnesia, fell asleep in the nurse's arms.

The child now, for the first time, began to evince symptoms of terror at each accession of the disease; formerly she never appeared in the least degree alarmed before or after the fits. No medical man saw the infant this evening; and as she appeared quite well next morning, the mother thought it unnecessary to have medical advice. During the next four days the disease appeared only three times, but the fits were of much longer duration than any of the preceding. On the 5th of February, the disease being aggravated, Dr. Marshall Hall and myself again saw our patient. During our visit the child had two severe fits of the disease; these were the first which Dr. Marshall Hall saw this infant have, and was now convinced that there was no cerebral affection existing as a cause of this disease. He also agreed with me in attributing it solely to a derangement of the alimentary canal, the motions being black and slimy, without a tinge of bile, and these produced with difficulty, even by the aid of medicine. The bowels were ordered to be briskly purged, and Dr. Marshall Hall recommended hydrocyanic acid as an antispasmodic, in the proportion of a minim to the ounce, a teaspoonful to be given occasionally after the bowels were acted on. I saw the child early next morning, and was informed by the nurse that the medicine had operated twice, but the motions were still dark and scanty; that she had administered the hydrocyanic acid once only since the bowels were opened, and only one crow came on during the night.

The child was sleeping when I made my visit; the breathing was evidently laborious, and sometimes stertorous during the time I was present. The child awoke after the lapse of ten minutes, crying, but had not an attack of the disease. I could now perceive a peculiar *rudesse de la voix*, or raucity of voice, especially in the act of crying, and which was not at all observed before this day. After walking about the room for a few minutes, the nurse proceeded to administer the hydrocyanic acid a second time, and with great difficulty could get the child to take it. From the irritation produced by forcing the little patient to take the acid mixture, a paroxysm of the disease was brought on, which began like one of the mild attacks that were heretofore observed, but rose gradually to a fearful height. The first evidence the child gave of the approaching spasm was by bending the *body forwards*, as in *emprosthotonos*,* and not backwards, as Dr. Clarke observed in the cases he relates. She seemed gasping for breath, and darted her head on all sides, as if seeking for air. There was now a momentary pause, in which the respiration was totally suspended; and this was immediately followed by a sound deep in the larynx, resembling the "*death rattle*," or the rushing of waters, which led me to suppose that some of the liquid had passed into the air passages.

The face now assumed a purple cast; the eyes were uplifted, presenting that peculiar appearance denominated "*pathetic*;" the pupils were widely dilated, and a deep blue, or livid areola appeared around the margin of the lips and eyelids; the body was still bent downwards, and rigidly retained in that position. The thumb was clenched in the hand; the arms and legs were strongly contracted; in a word, the entire body was in a state of the most rigid spasm. The gurgling sound of the air passages terminated in two or three *impeded* attempts at inspiration, which were at length followed by a long, loud, and shrill crowing inspiration, resembling that of *pertussis*; and the little sufferer, instead of crying, as formerly, now, from the extreme exhaustion, fell over in the nurse's arms, into a deep slumber; at first the breathing was heavy, but it soon became perfectly tranquil, and in this way she reposed for near one hour.

* Dr. Marshall Hall had never seen this state of contraction before; and this is the case he alludes to in his last lecture, where he states "the fifth case I saw there was emprosthotonos and contraction of the pupils during the spasm, with dilatation afterwards."

The following four days the paroxysms were milder, but more frequent than heretofore; and on Saturday, the 10th, they became greatly aggravated, and the danger of asphyxia was extreme; towards the evening of that day a violent paroxysm came on, far surpassing any of the former; the child lay perfectly stiff in my arms for some moments, and in this state, *with her clothes still on*, I plunged her up to her middle into a warm bath, which was ordered to be kept in readiness in case of any emergency. Dr. Tweedie came in just as the child was being removed from the bath, and was present during two paroxysms of the disease. I omitted saying that the fit previous to the warm bath being used terminated in convulsions, the first and last time during the progress of the disease, that they appeared.

Dr. Tweedie thought the disease was now at its height, and the infant's life was in considerable danger; that *during the paroxysm* nothing could be done to alleviate the sufferings, or avert the danger of strangulation, and they must only be allowed to take their course; and owing to the great torpidity of the bowels the most active remedies must be had recourse to. During the last four-and-twenty hours there was only one scanty motion, dark-coloured, and of the consistence of *putty*, although the child had taken three powders within that space, containing one grain and a half of calomel, with five of the dried carbonate of soda. The mercurial purgatives will be found, in general, improved in their action by the addition of this alkali, and followed up by a teaspoonful of castor oil. It was now agreed upon that one grain of calomel, three of scammony, and three of rhubarb, in the form of a powder, was to be administered immediately, and in two or three hours after a teaspoonful of the common black mixture, should be given; if this did not operate the powders were to be repeated until the bowels were moved. Injections of warm water having failed repeatedly on former occasions were not resorted to on this. The powders and black draught were administered twice, and after the lapse of eight hours and a half *one dark-coloured* motion was produced. The medicine not operating, as was expected, though six powders of the above strength were administered within the twenty-four hours, I changed the three grains of rhubarb for three of jalap next day, after a single dose of which the bowels were copiously discharged.

At the mother's anxious request I sat up all night with my little patient, as she dreaded the convulsions again coming on. However, nothing serious occurred in the night, but towards morning the child had *two modified* attacks of laryngeal asthma, the disease having evidently yielded to the influence of the medicine that had been administered. The powders were repeated every four or six hours from the last dangerous attack, until the disease was greatly abated. There was no accession of the paroxysms from Saturday evening until Monday evening, the 12th of February. Dr. Tweedie saw the child this day, and considered her greatly improved. He was surprised that her spirits, which were still active and lively in the extreme, were not in the slightest affected by the brisk and continued purgation, and the exhaustion produced by the disease itself when the paroxysms were so frequent and severe. On the morning of Tuesday, the 13th, the little patient not having had any medicine for nine hours previous, evinced a tendency towards the crowing inspiration again, the same peculiar *rudesse de la voix* as before mentioned, became again apparent. The calomel and drastic purgatives were immediately administered, and after the lapse of two hours, during which the crowing tendency continued, a copious evacuation (but still unhealthy) was produced; four hours after the last was given another was repeated, which also operated briskly, and the motions were not quite so dark as before, but still not natural; each of these powders was followed in due time by a spoonful of the common black draught to accelerate their action.

Dr. Marshall Hall now strongly urged change of air for the child, as he had two little patients within the last season, which were quite recovered by it, after the use of medicine. However, the inclement state of the weather at the time would not permit of an immediate change, and the child was now swathed in flannel, and the heat of the room was regulated by the thermometer to between fifty-eight and sixty degrees of Fahrenheit. I find nothing particular noted down in my case-book during the three following days (those are the 14th, 15th, and 16th) respecting the disease, but that the bowels were still kept freely open by the same remedies. On the 17th I was wishful to substitute a mild aperient,—hyd. c. creta, for the very severe remedies which had now been used for a week; accordingly the former medicine was administered in three grain doses, three times during the ensuing four-and-twenty hours, but without any effect, and the evidence of approaching spasm being again apparent, I immediately had recourse to the drastic purgatives, which operated after three hours, and banished the threatening symptoms of the disease.

On the 18th the child appeared uneasy and restless, but no appearance of the disease presented itself, and I again lanced the gums, being the third time since the disease assumed its dangerous aspect. The only medicine that was administered this

day was a teaspoonful of castor oil, which operated mildly on the bowels.

On the 19th and 20th the child was doing well, and lively in the extreme.

I saw my little patient on the 21st, at noon, and the disease appeared almost gone. The nurse informed me she had only one paroxysm within the last twenty-four hours, and that the bowels were opened twice during the same time without the aid of any medicine. I now strongly urged the mother to remove, for even a few weeks, to one of the villages around London, and this she accordingly did on the following day, February 22. Although the first week after the removal to the country the weather was very severe, still the child appeared benefitted considerably by the change, as not a single crowing inspiration was observed during that time, notwithstanding her being confined to her nursery from the day she was removed until the 1st of March. The bowels were still torpid, and an occasional mild aperient was necessary to keep them open; but from this time until the present nothing of any importance occurred (excepting one *threatened* paroxysm) in the infant's hygiene, the disease appearing to have altogether subsided, and the little patient is now daily progressing in health and vigour.

The following facts, detached from the history of the preceding case, are those which particularly demand our attention.

First,—That the infant, from its birth, evinced a tendency to spasm of the larynx.

Second,—That during the continuance of the profuse flow of saliva, this tendency to spasm totally disappeared, from which it would appear that dentition was the cause of it, more especially as the symptoms reappeared on the suppression of the discharge.

Third,—That the spasmodic paroxysms assumed a quotidian form, recurring at two o'clock each afternoon, *for some days*, and disappearing during the intermission.

Fourth,—That there was no cerebral affection whatsoever as a cause of this disease.

Fifth,—That the irritation produced by crying, or screaming violently, *seldom or never brought on a paroxysm* of the disease, this being contrary to all other recorded accounts of the same affection.

Sixth,—The *emprosthotonic* contraction of the body, in contradistinction to the cases narrated by Dr. Clarke and others.

Seventh,—The *contracted* state of the pupils during the paroxysm, and dilatation afterwards, which state I believe has not been hitherto recorded, except in last week's LANCET, where Dr. Hall alludes to *this* case in his lecture.

Eighth, and last,—The obstinate torpidity of the bowels, which in this instance appears to be, without doubt, the real exciting cause of the disease.

Observations, Physiological and Pathological on the preceding Case.

It has been disputed by authors whether the nature of this disease be inflammatory or nervous. It has likewise been contended whether the affection under consideration is a distinct disease, or merely a modification of another. Those who have advocated its inflammatory nature maintain that it is only a modification of croup: and those who are inclined to believe that it is entirely a nervous affection, equally maintain that it has no relation whatsoever to croup, or any other affection of an inflammatory tendency, but maintain that it is a disease in itself perfectly distinct and independent from all others, with, perhaps, the single exception of infantile convulsions.

In the entire animal economy we have not a more beautiful specimen of mechanism than that which the larynx presents; the exquisiteness of its adjustment, the skill of its contrivance, and the completeness with which the intended result is secured, can never fail to strike the young physiologist both with wonder and admiration. The production of sound and voice, the varieties of which correspond in intensity and duration with the vibration of the vocal chords produced by the air passing over them, must also excite the deepest interest in him to investigate and unravel that wonderful mechanism. Impressed with these ideas we were lead from our earliest studentship to the anatomy of these organs, and have more recently received an additional stimulus in these pursuits from the physiological views advanced by Dr. Marshall Hall; and this very disease under consideration (in our mind) may serve as one of the best illustrations of his "Theory of the Reflex Function." That an organ of such vital importance as the larynx should be so highly endowed with sensibility as it is, does not need an explanation; it only remains for us to allude to the source from whence that sensibility is derived, and the guarding and controlling power it has over this organ, that by the inferences arising from this investigation we may be enabled in a manner to point out the physiology of this important and interesting disease. Independent of the four laryngeal nerves derived from the par vagum, we find that the openings of the larynx are also supplied with branches from the sympathetic and spinal. The descending branches of the first cervical ganglion of the sympathetic join the laryngeal nerves, so also do the cardiac branches of the sympathetic,—the cardiac ganglion itself being formed by these nerves, by the eighth pair and their recurrents. We find the superior laryngeal nerves to be principally distributed to the membrane and glands of the larynx;

this is what has been called the constrictor of the larynx, and the inferior laryngeals to the muscles of this organ; the muscles supplied by the latter being three, viz., the posterior and lateral crico-arytenoid, and the thyro-arytenoid. Now, two of these muscles thus highly endowed with nervous influence through the medium of the par vagum, cervico-spinal, and sympathetic nerves, are *contractors* of the larynx; the third being a dilator. The superior laryngeal, as before stated, is chiefly distributed to the glands and lining membrane of the larynx, but it sends off two branches to the arytenoid and crico-thyroid muscles,—the former a contractor, the latter a dilator of the rima glottidis. From the foregoing brief sketch of the anatomy of the larynx, three things appear to us as worthy of observation:—1st. The peculiarity of distribution of the laryngeal nerves. 2nd. The high degree of *latent irritability* (if we may use the expression) that must exist around the sphincters of the air-tube owing to their nervous connection. 3rd. The *contractors* of the larynx being more numerous and more highly endowed with involuntary nervous energy than the dilators. This last arrangement is one of those wise provisions of Nature, showing her desire of avoiding complication in the mechanism of our being, of avoiding all unnecessary expenditure of muscular exertion in the performance of our functions, and of rigidly observing the laws of economy whenever such an object is attainable. For instance, the larynx in its natural or quiescent state is expanded or rather dilated, such a state only being compatible with existence. Then, the reason is very evident why such a state should not require muscular exertion to maintain it so continually; for we know that the dilatation of the glottis, even after the act of deglutition, depends more on the elastic and erectile properties of the tissues adjoining this orifice, than upon mere muscular exertion. But the contraction of the larynx depends altogether on another source for its due performance. Here it is that the muscular exertion is brought into proper play; and here it is most required. If we swallow a portion of food the larynx is hermetically sealed while the extraneous body is passing over it; and this is done by *muscular exertion* alone; but the moment the alimentary bolus has passed into the œsophagus, the exciting cause being removed, the larynx immediately resumes its natural position it resumes this position, not by muscular exertion, but by its own elasticity, the antagonising power of the constrictors of the larynx having given way. We know that this muscular arrangement is indispensably necessary, as without it life could not go on; it is absolutely necessary that there should be some guarding and controlling power over the orifices of this organ, that they may be closed against the slightest particle of offending matter presenting itself in their vicinity; and how beautifully and effectively Nature has provided against such intrusions we have clearly demonstrated through a knowledge of the anatomy and physiology of this region.

If the larynx and its muscles are so highly endowed with sensibility in adult life, how much more so must they be in the infantile state, when the nervous system alone has the ascendancy, where it rules supreme over the entire system, morbidly alive to every impression, and governing the functions of the entire economy by its influence. We all know the wonderful changes which the larynx undergoes from the period of infancy to that of puberty; the alteration in its calibre, and in the chordæ vocales, producing thereby those variations of sound and voice, from the shrill cry of infancy to the deep full tone of manhood. We are also aware that the young system, in progressing towards puberty, gradually loses that inordinate sensibility and irritability it possessed in infancy, and with it the larynx becomes less excitable, and more (as it were) under the control of volition than it was heretofore; hence it is that we never find laryngeal asthma attacking adults. However there is a case or two of this having taken place upon record, but they appear of doubtful origin.

From the recorded history of this disease, from its near alliance to infantile convulsions, and (without presuming) from our own experience, we are led to the following conclusions:—1st. That laryngeal asthma, or spasm of the glottis, is a disease peculiar to infancy, by which we mean any period within twelve months from the infant's birth; and in this conclusion we are in a manner borne out by the fact that this disease is seldom or never seen in the Hôpital des Enfans Malades, at Paris, where there are no children *admitted under one year*. We are informed by Dr. P. Hennis Green that during the four years of his attendance on this hospital there was not a single case of this disease admitted. Mr. Walker, of Drury-lane, did not see this affection while attending this hospital; and during our attendance on the Children's Hospital at Paris, we never met with a case of the disease. 2nd. That those children who *have not been nursed* by the mother are much more liable to this disease than others. 3rd. It likewise appears that infants of a nervous temperament are more frequently subjected to attacks of laryngeal asthma than those of a lymphatic or sanguineous constitution; in short it is a *purely nervous disease*; and nothing appears to be more erroneous than confounding it with croup—an inflammatory disease; it has no relation whatsoever with it, and all those names given to this disease with a view of connecting it with croup are radically bad,

as they invariably tend to give a false idea of its real nature. Guersent, of Paris, has described this affection under the name of "pseudo-croup nerveux," and more recently Jurine and Albers have described it as a mere modification of croup. But we agree with Dr. Joy, of Dublin, who maintains that it is "broadly distinguished from croup, as well by its intermittent nature, as by the usual absence of cough and fever, and by the sudden death which not unfrequently occurs in it." Gardien gives a description of this disease under the title of "Spasme du Thorax et de la Glotte;" but his cases are more like hysterical affections than that under consideration. He attributes it to a spasm of the diaphragm, muscles of the chest, larynx, &c., and differs widely from all other writers on the subject, in supposing that it most frequently occurs between two years old and seven. He also states that the stomach and intestines are distended with air, producing great uneasiness; but I am not aware of this being observed by other writers, and in those cases that have come under our notice it certainly was not present. We have observed, however, a peculiar symptom in the case just related, viz., the contraction of the pupils during the paroxysm, and their dilatation after it was over.

Dr. Marshall Hall has lately directed the attention of the profession in this country to laryngeal asthma, as being one of the best illustrations of his "excito-motory system." This disease, as Dr. Hall justly observes, is produced either by difficult dentition, over-feeding, or constipation of the bowels, through an excitation of the fifth pair, the pneumogastric, or the spinal nerves. In addition to those already enumerated by Dr. Hall, I would beg to add *cold* as an exciting cause, particularly where there is a predisposition to the disease, as is well exemplified in the foregoing case. For, in the instance alluded to, the disease was always observed to be aggravated when the temperature of the body was below par, and seemed in a great measure removed by swathing the infant in flannel, and thus producing an increase of warmth. The *predisposing cause*, in the present instance, seems to be the excitability of the infant's nervous system, which was, perhaps, aggravated by the early changing of the child from its natural food, and in all such instances convulsive diseases are more or less to be dreaded. The *exciting cause* was undoubtedly the obstinate constipation of the bowels, producing derangement in the functions of the alimentary canal, the irritation arising from which was reflected upon the larynx through the par vagum, and thus producing the spasmodic constriction of that organ. And the *immediate cause* appears to be the *extreme cold* applied to the body when thinly clad. Teething seemed to have no part in exciting the disease in the present instance, if we except the suppression of the profuse salival discharge; and even this exception seems to be nullified by the fact that up to this very day the discharge is still suppressed, and still there has not been even a tendency to the disease for at least five weeks. There was evidently no irritability in the gums, or in the child's disposition, nor any of those symptoms consequent upon teething, to warrant us in supposing that irritation from that cause was an excitor of the spasmodic paroxysm.

Morbid anatomy has done little in clearing up the exact seat and nature of this disease, if we except a negative proof given in favour of its being a *nervous affection*, and which we are led to infer from the fact that there never has been found any evidence of inflammation in the supposed tract of the disease, during those posthumous examinations we have on record.

With regard to the *treatment* of laryngeal asthma, we are more inclined to advocate the the purgative than the palliative plan, not presuming to recommend this treatment from the case above related alone, but from several others which have come under our observation, in which we are confident no other plan could be so efficacious. Before trifling with the disease we must first endeavour to remove the cause which produces it, and in cases of impending asphyxia, like the present, no treatment can be of any avail except the most prompt and active. Of the three causes of this disease mentioned by Dr. Hall, it appears that over-feeding, and consequently derangement of the alimentary canal, is by far the most productive. In such cases nothing but the most active purgation seems to have any effect; and it is astonishing how far infants will bear and require this treatment to be pushed while labouring under disease. After the cause is removed then we may have recourse to palliative remedies, and not till then. The external application of croton oil to the larynx might be of use in this disease.

Dr. Marshall Hall strongly recommends change of air and a young nurse in case the little patient has been weaned. Dr. Tweedie informs me that cold effusion to the head after the bowels being opened, has frequently banished this disease. Dr. Joy recommends tonics, as the sulphate of quinine, &c., after the cause is removed; he also states that antispasmodics too often disappoint expectation, and are of very secondary importance in the treatment of this disease. Dr. Merriman states that this disease, if attended to in time, will generally yield to aperients given so as to produce two evacuations daily. We shall now conclude this paper in the words of Dr. Joy, who says that "this disease, even in its simplest and mildest form should never be neglected, as, in the absence of every com-

plication, the *spasm of the muscles of the larynx alone*, has often proved suddenly fatal."

3, North Crescent, Bedford-square,
March 26, 1838.

MR. NEWPORT'S "SECOND REPLY" TO PROFESSOR GRANT.

To the Editor of THE LANCET.

SIR:—A letter from Professor Grant, inserted in THE LANCET of the 17th instant, obliges me again to request that you will allow me space for a few comments.

In my former "Reply" to Dr. Grant I stated, as I thought distinctly, the points of difference between him and myself; but the manner in which he confuses his views with mine, renders it necessary that I should again state shortly the difference of our opinions. It appears that he would still wish it to be thought that his views and mine of the *true motor column* in articulata are identical, and that my descriptions of the motor column refer entirely to the transverse nerves. Now, it is well known that I have never claimed the discovery of the transverse nerves of Lyonet, but only the pointing out some interesting facts in the anatomy of these nerves, as to the manner in which they pass over the ganglia, which the extract I gave from Müller's "Archives" in my "reply," will prove. The assignment by me of the function of respiration to these nerves, a function suggested by their distribution, was published in my paper in the "Philosophical Transactions," in 1832, *before the time at which Dr. Grant claims to have assigned that of motion to them.* Whether my function, assigned from their anatomical distribution, or that of Dr. Grant, from analogy, be correct, remains yet to be seen, but it is questionable whether Dr. Grant can any longer call these nerves *the true motor column*, since, in those animals in which they exist, they are distributed chiefly to the trachea and muscles of respiration, and since the structure to which he also assigned the function of motion in the scorpion, and which he considered the analogue of these nerves, has been proved to belong to the *vascular*, instead of the *nervous* system.

The existence of a distinct and true motor column in the nervous centre of articulata, I do claim to have first pointed out. This structure, or column, is not, however, situated loosely on the upper surface of the nervous chord, free and widely separated from the other parts of the chord, as Dr. Grant's *presumed* motor is, but placed beneath the transverse nerves, closely united to the inferior or ganglionic part of the chord, and gives off nerves to join with those which come from this same portion of the nervous chord. Its structure is that of two longitudinal bands, best observed as they pass over the ganglia, where a line may be seen indicating its separate existence. This is the structure, then, for which I claim the function of motion, and which Dr. Grant, in his letters, carefully avoids to mention, and when obliged to speak of a motor column, confuses with the transverse nerves, which, as I have shown, certainly do not constitute the true motor column.

I have thus explained, a second time, that I had *assigned a function* to the transverse nerves *before any had been assigned to those very nerves by Dr. Grant*; that those nerves do not constitute, as he has described them, the *true motor column*, because of their particular distribution to the muscles of respiration and the tracheæ; and I have elsewhere shown that what he has referred to in the scorpion, *as the motor column*, does not belong to the nervous system, and consequently he has not yet described the *true motor column* in these animals. These facts, I trust, will prove that I have not been indebted to Dr. Grant for my opinions respecting the structure and functions of the nervous system of articulata.

This brings me to another part of Dr. Grant's letter, in which I think I may justly complain of his unfairness and misstatements. Conscious of the difference of our position in science, and the greater credit that would therefore be attached to his statements, he has attempted, in consequence of a little ambiguity in Lyonet's expressions, to pervert their true meaning, in order to show that I have been anticipated by this author. Lyonet describes, and in one instance, Plate IX., figures, the transverse nerves as connected to the chords which pass from the brain, or first ganglion, to the second, by means of two portions which seem ("*semblent*") to be continuous with the fibres of these chords, and which, converging, pass over the second ganglia to unite on the third, to form the first transverse nerves, "*la bride epiniere*;" but Dr. Grant, in stating this fact, has used the words "*columns*," and "*broad white bands*," as passing over the ganglia, terms which are not to be found in the description of Lyonet. Again, the whole sentence in Dr. Grant's last letter, beginning—"In the figure of Lyonet, then exhibited and described to the class, the transverse nerves are delineated as passing into *columns*, which extend over the upper surface of the ganglia, *at both ends of the nervous axis*, and as coming *always from and over the upper surface* of the chords, in the intervening parts of the axis,"—is quite unsupported by Lyonet's description; for, even in the sentence from which Dr. Grant has made the extract, he has thought fit to suppress the concluding portion, which is opposed to his statement, and the words of which are after "qui en derive,"—"*ce que ne se remarque pourtant pas dans tous les*

sujets." Lyonet has, moreover, *distinctly stated*, in the following words, at page 204 of his work published in 1760, that the origin of the last or tenth transverse nerves, *is not derived from the chords* which connect these ganglia together, *but* from *the posterior part of the penultimate ganglion.* "La dixieme et dernière bride *ne tire pas*, comme les autres, *son origine du conduit de la möelle epiniere mais de l'extremité du penultième ganglion*, d'ou passant pardessus le dernier ganglion, le nerf, qui tient á cette bride, la produit vers la 11me division." Besides this, Dr. Grant has entirely forgotten even to allude to Lyonet's general description of the origins of the transverse nerves, "brides epinieres," at p. 98, where Lyonet states that—"On voit que, *de l'extrêmité postérieure des ganglions, dont les conduits sont doubles, et du commencement de chaque separation de ceux, dont les conduits ne sont simplement que fourchus, descend un nerf*," &c., the origin of the transverse nerves; so that, notwithstanding Dr. Grant's statements, Lyonet has described these nerves as *coming from ganglia*, as well as from the *chord*, which he nowhere states to be composed of motor and sensitive structures. Although Dr. Grant has thus attempted to show that I was anticipated by Lyonet in my descriptions of the nervous system, I think it will be seen that he does not succeed in his endeavour, since the above extracts refer entirely to the descriptions of the transverse nerves (my respiratory) and not to what I have described as *the true motor tract, or column*, which still exist beneath these converging portions of the transverse nerves, and from which these nerves derive a few filaments, as stated in my paper in the "Philosophical Transactions," 1834, page 404. But Dr. Grant has asserted more than this. He states that the drawings I have published with my paper in 1834, are a "*fac simile*" of those of Lyonet, of 1760, plate ix., fig. 1. This, as every one will perceive, is incorrect, when I state that Lyonet's drawing represents the nervous system of the *cossus*, a moth of peculiar habits and structure, while my own drawings represent that of the *sphinx*, a moth of a very different description, and also of the *common nettle butterfly*; and that, when the drawings of Lyonet and myself are compared, and minutely examined, the details in each will be seen to differ greatly, and are no more identical in these three species of insects, than are the details of the spinal chord of the hedgehog with those of the spinal chord of the mole or of the shrew.

Besides this reference to Lyonet, Dr. Grant has quoted Straus, Edwards, and Andouin, to show that I was also anticipated by them; but a perusal of their works will prove the contrary, since in none of them is there any mention made of the existence of *motor columns*, nor of the compound structure of the spinal chord; moreover, Dr. Edwards himself, in his article on "Crustacea," in the "Cyclopædia of Anatomy," page 769, has referred to me as the first to point out distinct motor and sensitive structures in crustacea, which had been "hitherto overlooked by anatomists."

Notwithstanding the levity with which Dr. Grant, in his last letter, treats of my "juvenile," as he is pleased to call them, "productions," they merited perhaps a little more consideration, as the following fact may show. In my first paper, which Dr. Grant examined before it was read to the Royal Society, I described the visceral, or *recurrent nerve* of Lyonet, as the *vagus*, and considered my opinion original, until Dr. Grant wrote against the passage on the draft paper, which I still possess, the following remark:—"*The opinion commonly received of Straus*," &c., "*nerfs des organes vitaux*;" and in consequence, on the authority of Dr. Grant, I mentioned Straus in my paper, as the author who had previously described it as the vagus. At that time I was not acquainted with the work of Straus, but have since found that he *nowhere describes it as such*. Now, Dr. Grant had made it convenient to mention in his lecture in 1832, the *existence* of the *vagus*, as proved by his extract from Dr. Baly's notes, without once alluding to the source of his information.

After the facts I have stated, and the refutation of the unjust inferences made by Dr. Grant from the writings of Lyonet and others, and which perhaps will show with what fairness he has accused me of plagiarism, I enter on the misstatement with reference to myself. I again repeat, that I showed to Dr. Grant, in Nov. 1833, a preparation of the nervous system of the lobster, with the motor and sensitive columns, and which had previously been shown to Dr. Hall and others; and I must again assert, that the preparation which Dr. Grant showed to me on that occasion was one of the scorpion. I may add, that Sir Charles Bell first published a concise description of my preparation of the motor and sensitive columns in the lobster, in a letter dated Dec. 2, 1833, in the "Medico-Chirurgical Review," for Jan. 1, 1834. The preparation itself, dated Oct. 10, 1833, is now in the museum of the College of Surgeons, numbered 1302, A, and was sent there by Sir Charles Bell, and not by myself, as printed by mistake, in the catalogue of the Hunterian Museum, vol. iii., 1836. I am not a little surprised at Dr. Grant's statement, that a structure which he alludes to as a "*single median motor filament*," "has been shown to me" to be a ventral vein returning blood to the heart. I deny that any student ever showed to me that this structure was a vessel. If Dr. Grant can possibly refer to the *publication* of the fact, I have stated elsewhere that I was aware of

its being a vessel long before the publication of it. Dr. Grant next says, that "no person, except Mr. Newport himself, *ever figured, or described or imagined*, my motor nerves of articulata to *proceed from ganglia*, or to form ganglia in their course," &c. Now, if Dr. Grant had ever actually traced the different phases which the nervous system undergoes in the progress of development, he would then have known that *there are stages* in which the transverse nerves assume "a transitory ganglionic appearance," as I have stated in my papers in 1832 and 1834, and a trace of which frequently remains.

Towards the conclusion of his last letter Dr. Grant again accuses me of plagiarism, notwithstanding this charge has been already answered, and he afterwards uses the following words, in reference to a notice in my paper, published in the "Philosophical Transactions" for 1836, at page 542, in which I have alluded to some observations of his in a lecture in THE LANCET of July 5, 1834, page 515. He says, "to this I beg leave simply to reply, that *there is* no sentence in that reference *which either the most designing or the most ignorant could construe into such a meaning*." Now, the quotation which Dr. Grant professes to give from my paper, is both incorrect and incomplete, he having terminated the extract he has given not at a *period*, or even at a *comma, but actually between two commas*, with an &c. The following are the words of my paper:—"It has been stated by Dr. Serres and Dr. Grant, that a series of ganglia exists on each side of the alimentary canal, which appears to be independent of the transverse nerves. I must acknowledge, however, that I have been unable to trace this series *beyond the anterior lateral ganglia, which are contained within the head, or first segment*, &c.—(Op. cit. p. 542-3.)

To Dr. Grant's assertion, therefore, I reply simply by quoting, from his own printed lecture, the passages to which my remark refers:—

"There are *numerous* other nervous ganglia in insects, and other articulata, besides those which are connected with this great nervous column, the analogue of the spino-cerebral axis of the vertebrata. *These* are seen extending from the cerebral lobes themselves, small nervous filaments, which unite into the first of *a longitudinal series of sympathetic ganglia*. The first of these *sympathetic* or *visceral* ganglia sends out filaments, and farther on, in the course of those filaments, another ganglion is observed; thus is the system of the great sympathetic so minutely detailed in the plates of Lyonet. *Those filaments of the sympathetic ganglia are observed to be distributed upon the principal viscera of organic or vegetative life*, and it is by the development and extent of this *ganglionic system of the viscera*, so minutely described by Lyonet, Dufour, Straus, and many others, that *the vital connection of all the segments is chiefly established*."

A little farther on, in the same lecture, Dr. Grant again refers to the subject, and says,—"These *numerous* ganglia occupy a *middle position in the body, below* the level of the cerebral lobes, and *above* that of the *abdominal ganglia*." These, then, are the passages to which I referred, and I leave your readers to judge whether or not my statement was correct. Lyonet, and the authors named, have described the sympathetic ganglia of the head, and the existence of these is also noticed in that part of the sentence from my paper which Dr. Grant *omitted to quote*.

In concluding this "second reply" to the attacks of Dr. Grant, I can but again remark, that the many personal allusions he has made respecting me, both in his first and second letter, are as derogatory to him as they are unmerited by myself; and that his reference to the "humble occupation" in which I spent my youth, made, as it would seem, with a view to depreciate my claims in the consideration of your readers, but which humble occupation, I trust, no honourable mind could possibly consider a discredit to me, is more pitiable in him from the circumstance that the fact was communicated to him *in confidence*; and surely his own experience in life ought to have taught him to have been the *last* to scoff at the *difficulties* of others; while I hope that your readers will allow me to have possessed, in this controversy, one little superiority over my opponents, that of having sought for no weapons in my defence which science and gentlemanly courtesy alike disdain.

With these remarks I must close my present communication, as much regretting that my opponents should so far have forgotten their own dignity, as not to have confined their observations to science, as I hope not again to have occasion to intrude myself on your pages; whilst, however, the statements of interested individuals, whether made in public or in private, may, or may not, have influenced the opinions of contemporary physiologists, conscious of the justness of my own claims, I shall calmly await the decision of time, the impartial arbitrator of all controversies. I remain, Sir, your very obedient servant,

GEORGE NEWPORT.

10, University-street,
March 26, 1838.

P. S. In my second reply to Dr. Hall, printed on the 24th of March, I observe there are two misprints, which I shall feel obliged by your correcting. The first is in the date of the receipt, which is printed 1822, instead of 1832; and the other is in the date of Dr. Hall's note, printed 1835, instead of 1836.

THE LANCET.

London, Saturday, April 21st, 1838.

THE unsatisfactory state of the medical department of the Navy has, for many years, been a subject of complaint. In the Army, assistant-surgeons rank as commissioned officers: in the Navy, the assistant-surgeons are ill-paid, degraded, and separated from the officers; an invidious distinction pursues them through all the circumstances of daily life, from the mess-table to the hammock. As promotion and pay in the Army and Navy are, ere long, to be publicly investigated, we are glad to find, by our correspondents, that Navy surgeons are not only prepared to assert their claims at the proper juncture, but to support them by arguments which are likely to influence Parliament in their favour.

It appears to us, that the case of the naval surgeons cannot be separated from the health of the Navy, or the services that the medical officers render, from the remuneration they receive. The disconnection of these two things, and forgetfulness or ignorance of the important bearing of the health on the efficiency of the maritime force of the country, have contributed, more than anything else, to perpetuate the grievances under which this class of the profession labours. We shall, therefore, devote an article or two to a preliminary examination of the health of the British Navy.

The naval force required for the defence of the empire of course varies in war and peace. In the sixteen years of war, 1800—15, the average number of seamen, marines, and boys voted, was 132,000; in the fourteen following years of peace, 1816—29, the numbers amounted, on an average, to 25,800. The lowest vote was 19,000, in 1817; since when the numbers have progressively increased, and, for the present year, make 34,165; or, 23,165 seamen, 2000 boys, and 9000 marines. The entire force voted is, however, never employed; thus, last year, the money voted was for 23,163 seamen, while 20,122—87 per cent.—was the number actually in service on the 1st of January, 1838. On the 1st of January, 1838, the Navy comprised 626 ships and vessels; but not more than 260 appear to have been afloat. In the period of war, 1808—13, there were about 1000 pendants on vessels, which measured from 800,000 to 1,000,000 tons. If we extend our views to the commercial marine, it will appear that, on an average of three years, 1833—5, the number of vessels belonging to the British empire amounted to 24,984, the tonnage of which was 2,711,479, the crews 167,694. The number of men on board 13,772 British and Irish vessels that entered inwards annually, was 126,970: on board 5801 foreign vessels, 45,008. Nearly the same proportions entered outwards. The annual exports, calculated at the official rate of valuation, amounted to £85,163,712.

The severer chronic diseases of seamen and marines in her MAJESTY'S fleet are treated on shore. For their reception there are, besides the Royal Hospital, Haslar, and the Hospital at Plymouth, four Marine Infirmaries, at Portsmouth, Plymouth, Chatham, and Woolwich. The two latter serve as naval hospitals. The Navy has, also, medical establishments at Malta, Halifax, Bermuda, Jamaica, and at fifty ports around the British coast, it has quarters where ships may send their sick. 2000 invalids are lodged in Greenwich Hospital. In war the number of hospitals is increased. About 8000 labourers in the naval yards are attended by Navy surgeons. The number of medical officers specified in the Estimates is 1006; but this, probably, does not include 50 surgeons at sick quarters. About 400 are on duty; 38 retired; 568 on half-pay. We have no means of ascertaining the number of surgeons engaged in the merchant service, but it can scarcely be less than the number in the Royal Navy.

No question is of greater national importance than the health of the Navy; and perhaps no question, if adequately treated,

would yield so many interesting results, as the most cursory examination would serve to establish. The dangers of the sea have always been acknowledged. The dread of shipwreck is not slight even in this country; and the ancient poets declared that the man was bold or mad who first ventured his fate on the waters. *Illi robur et aes triplex*, HORACE exclaimed, meditating on sea monsters, the swelling waves, and the Acroceraunian rocks of Epirus; and the folly was grave enough to attract the satiric lash of JUVENAL,

> Ventis animam committe dolato
> Confisus ligno, digitis à morte remotus
> Quatuor aut septem, si sit latissima taeda.

A Greek poet sings that the earth is tender as a mother, the sea no better than a step-mother. Despite of these sentiments, which echo accurately enough the popular fears, man has grown every day more familiar with the sea; he has compassed it round about; the ocean is the highway of nations; it connects the distant dominions of this empire, and in "all moods, calm or convulsed," is the home, the haven, the grave of many thousands. The losses from shipwreck in the British Navy have, perhaps, never been so formidable as the loss of life from diseases generated by the circumstances in which men at sea are placed, and over which complete control is attainable by art.

The life of the mariner depends upon the safety of the ship: he is sustained on the waters artificially; and but too generally perishes when the vessel founders. He is cut off from the land; fresh food cannot be procured; and unless the ship carries adequate supplies of provisions of one kind or other, he must die of hunger. Many such cases have occurred; few will forget, in the painting of the wasted crew of the *Medusa*, the fixed despair, the frantic signals, and the wild eyes bent on an unbroken horizon. In large ships a great number of persons are crowded together; and the supply of air is liable to become inadequate. The removal, too, of excrementitious accumulations; of exhalations from the lungs and skin; of impurities of every description, becomes a matter of no small difficulty when from 600 to 1000 men are confined within the walls of a single vessel. While the fresh air blows freely over the waves the local imprisoned atmosphere may be saturated with animal poison. To wounds and violent death in battle, and to the insalubrity of pestilential climates, mariners are exposed in common with landsmen.

This analysis of the peculiar causes of death at sea, enables us to explain the principal diseases that have ravaged our navies. In the open canoe, the boat, the galley—the early naval architecture of every country—the dangers of shipwreck and hunger would be the greatest source of apprehension. This, the erection of larger, stronger, and more durable ships would partly remove. The durability of ships has been increased by covering them, by steeping their timber in preservative solutions, by sheathing their sides with copper, and by improvements in their construction. The duration of ships of war was formerly estimated by a Commission at 7 years. In the time of a subsequent Commission it appears to have increased to 12½ years; and in 1822, was stated by Sir JOHN BARROW, one of the Secretaries of the Admiralty, to be about 14 years.—(Art. Navy, Sup. to Ency. Britannica.) The average annual number of vessels built in the British empire in the three years 1833-35 amounted to 1213; while the average number of vessels existing was 24,984; whence it may be inferred, if the ratio has been maintained for any time, that the average duration of British vessels is now 21 years. The building of a 74-gun ship consumes 2000 oak trees; so that the increase of duration is important in an economical point of view; but it is more important, inasmuch as it diminishes the loss of life ensuing from bad vessels foundering at sea. The great destruction of convicts from this cause will be easily recollected.

Before the reign of HENRY VIII. and ELIZABETH, when the first large vessels were built, we read little of scurvy and ship fevers. Ventilation was inevitable in small

open ships. Before those periods, too, long voyages were rarely attempted, and our navies were never stationed on the destructive coasts of Africa, or the West India Islands. In the Crusades (1250), scurvy ravaged the fleet of St. Louis. The English fleet of 49 sail, raised to combat the Spanish Armada, carried 14,872 men; each of the four largest ships had 1000 men aboard. Sir Richard Hawkins, one of the admirals, relates, that in the course of 20 years, he had known of 10,000 seamen having perished of scurvy alone. Scurvy almost invariably broke out in long voyages, which became frequent in the 17th century; so late as 1742 the disease asserted in the *Centurion*, commanded by Anson, all its terrors. It must not be imagined that scurvy was the sole disease generated by unnutritious diet and an empoisoned atmosphere; fever and dysentery were still more fatal. The Channel fleet sent 11,732 cases of sickness to Haslar Hospital, in 1780; 1457 were cases of scurvy, 240 of flux, 5539 of continued fevers! Of 9787 cases, 8143 were classed as physical; 1644 as surgical; the latter including 979 of ulcer, abscess, and wounds. This is a fair specimen of the health of large fleets down to the end of the 18th century; neither ships nor men could keep the sea for more than two months.* Fever laid up ships of the line, and their services were lost to the country for many months at a time. So much had the hygienic regulations of the Navy improved in 1800, that Earl St. Vincent closely blockaded the French fleet in Brest for 121 days, and during the cruise the fleet had not one *fresh beef* dinner, yet the sickness was inconsiderable. Dr. Baird, however, exaggerates the health of the fleet under Earl St. Vincent, when he says that out of 24 sail of the line, frigates, fire-ships, &c., they had occasion to send only 16 patients to an hospital.† The improvement in the health of the Navy during the 36 years from 1779 to 1815, is ascribed by Sir Gilbert Blane, in the first place, to the general distribution of lemon juice and nitric acid in the Navy, from 1796. Its virtues were previously known, but had never been extensively applied before the appearance of Lind's classical "Treatise on Scurvy" (3rd ed. 1772, p. 153.) Sir G. Blane says that it is a certain preventive as well as a cure; and that he has never seen the scurvy resist the acid, or met with more than two cases which seemed to resist it, in the perusal of several hundreds of surgeons' journals (p. 27-8.) (2.) To improvements in ventilation and cleanliness. The sailors began to wash themselves and their apparel; they were first allowed soap in 1810; and Earl St. Vincent had their hammocks and beds aired twice a week so early as 1800. (3.) The dryness promoted by fires carried about in stoves. (4.) The use of iron for ballast, and of iron tanks for the preservation of water. (5.) Mr. Sepping's improvements in the construction of ships, by which cavities under the hold are abolished, where filth and vermin of every description accumulated; and a communication is kept up between the external air, the hold, and the space between decks; and the leakage being less there is less bilge-water, which often produced instantaneous suffocation. (6.) The superior quality of all their articles of victualling; the plentiful supply of fresh meat and vegetables when ships are in port, or within reach of it. (7.) And, finally, the better treatment of the sick. Before the year 1796 the surgeons supplied themselves with medicines at their own expense; in that year they were furnished with a gratuitous supply of the principal medicines; and in 1804 the whole were supplied by Government; the *sick-berth*, and all the accommodations for the sick and wounded, were placed on a better footing.—(*Blane's Select Dissertations*, vol. i., p. 19—44.)

The previous violations of the laws of life will be better understood by considering the following statement, made subsequently

* Sir James Saumarez, cited by Sir G. Blane, in his "Dissertations," vol. i., p. 18, ed. 1833.

† Sir G. Blane.

to 1813, when, according to Sir G. BLANE, the sanitary state of the Navy had been so greatly ameliorated. In a paper read at the Medical and Surgical Society, May 12th, 1818,* Mr. COPLAND HUTCHINSON says:—

"The beef or pork commonly issued to the ship's company at sea is so highly salted, and frequently kept so long in its briny pickle, that its bland and nutritious juices are in a great measure exhausted. Except in ships of war of the first and second rate, a portion of one deck only is appropriated to the whole ship's company to sleep in, and this is consequently so crowded with hammocks, and the men so impacted together (14 inches in width being the total space allowed to each individual), that some dexterity is requisite to obtain ingress and egress to and from their beds. The lower deck being always the part alloted for repose, the ports are, for the safety of the ship, necessarily closed all night, and the temperature of the surrounding air is thereby so exalted, that the place becomes a kind of steam-bath from animal exhalations, the men being literally immersed in their own perspiration."—Page 452.

It is to be regretted, for the sake of medical science and of the country, that no accurate observations of the mortality in the Navy have ever been published. It would have been exceedingly satisfactory to trace the decline of the mortality, step by step, with the physical improvements of the circumstances in which the men have been placed. Sir GILBERT BLANE attempted this with very imperfect, garbled documents, which have been ill understood and ill interpreted. Sir JOHN BARROW, in an excellent article on the Navy (Sup. to Encyclo. Brit.), has confirmed and given circulation to one of the greatest illusions respecting the health of the Navy ever entertained.

"From the official returns," says this writer, "collected by Sir GILBERT BLANE, M. DUPIN, a French author, well versed in naval affairs, has drawn out the following table, which exhibits, at one view, the progressive diminution of sickness, death, and desertion in the British Navy, calculated on 100,000 men:—

Years.	Sent Sick to Hospital.	Deaths.	Desertions.
1779	40,815	2654	1424
1782	31,617	2222	993
1794	25,027	1164	662
1804	11,978	1606	214
1813	9336	698	10

"From hence it would appear that the diminution of sick and deaths has been in the proportion of 4 to 1 nearly, between the years 1779 and 1813." This would represent the annual attacks of sickness in 1813 as little more than 9 per cent., and the mortality as about 7 in 1000. Sir GILBERT BLANE led the way to this strange misstatement, but he furnished the means of demonstrating its error; the deaths are only the deaths in the Naval Hospitals; they do not include the deaths in the ships. Now, the deaths in hospitals amounted in 1813 to 977 (the number on which M. DUPIN's calculation was founded); and the deaths on board ship (which M. DUPIN overlooked) amounted on an average of the three preceding years to 4553! Instead of 698 deaths in 100,000, the proportion of deaths was 4048; into this error M. DUPIN was led by the vague, highly-coloured statements of Sir G. BLANE; and the Secretary of the Admiralty, instead of correcting, very adroitly availed himself of, the Frenchman's flattering error. Sir GILBERT BLANE, in a second table (p. 78), gives the number of seamen voted by Parliament, and the number sent sick to hospitals, from 1778 to 1806; the number annually sent sick to hospitals, although the number voted increased, was reduced from 22,000 or 32,000 to 7662; he leaves it to be inferred that there was this difference in the health of the Navy; but Sir GILBERT was one of the Commissioners of sick and wounded seamen from 1795 to 1802, and must have been aware that other causes had a share in effecting this difference. The men formerly could not be treated aboard, a great proportion of cases were, therefore, sent ashore.

* "Transactions," vol. ix., p. 452.

He himself says, "There are now ample "means of treating the diseases and wounds "of men on board their own ships, whether "at sea or in harbour, which it was neither "safe nor practicable to do in former times, "when infection was rife, when the accom- "modations were unfavourable to recovery, "when the supply of medicines and neces- "saries was inadequate, and when there "was a deficiency of medical and chirurgical "skill." Surely this should have been considered in accounting for the diminished number of cases *sent to hospitals*.

We understand that an investigation of the sickness, diseases, and mortality of the Navy has been commenced. Let us hope that the investigation will be pursued as far back as possible, for no statistical observations hitherto published on the subject are accurate or complete, and we wish to see the improvement of the health of the Navy incontrovertibly established.

Mr. Baron ALDERSON, who presided at the trial of the cause MERRICK *versus* WAKLEY, at the late Hereford assizes, has *signed a certificate to deprive the plaintiff of his* COSTS. MERRICK, therefore, who allowed Nature to pursue her own course in a case of strangulated hernia, having gained from us ONE FARTHING, as damages, awarded to him by a SPECIAL JURY, in consequence of our having exposed his gross ignorance and negligence to the public, will be required to pay to that sapient lawyer who advised him to institute the action against THE LANCET, about ONE HUNDRED AND FIFTY POUNDS sterling,—a somewhat comfortable set-off against THE FARTHING!

The certificate of the Judge and the verdict of the Jury, sufficiently testify to the truth of every important allegation which was made against MERRICK in the columns of THE LANCET.

Will this person be allowed to retain his situation by the Poor-Law Commissioners? We shall see; and then, probably, a "justification" of *their* conduct may be demanded before the Poor-Law Committee which s now sitting in the House of Commons.

MEDICAL RETURNS FROM THE POOR-LAW UNIONS.

CORRESPONDENTS continue to address us from several places in the country, complaining of the "Returns" which they have been required to make by an order of the House of Commons. The Poor-Law Commissioners, in sending the different "forms" to the medical officers of the Unions, have not subjected themselves to censure, as they have only acted ministerially in so doing, under an express mandate from the Legislature. It is hoped, when all the "Returns" are furnished, that the evidence afforded by them will prove advantageous to the medical officers themselves, and that the duty which they are called upon to execute on this occasion, will be productive of benefit not only to the public, but to an immense majority of members of the medical profession. On no future occasion will such voluminous "Returns" be required. We would earnestly entreat of the medical officers of the Unions to fill up the papers without delay, and restore them to the Poor-Law Commissioners, in as complete a form as they can accomplish by means of the various data and matters of information now in their possession. Any medical officer who may contumaciously neglect to make the required "Returns," would subject himself to a fearful responsibility.

The Utero-Abdominal Supporter, a new Instrument for the Relief and Cure of Procidentia and Prolapsus Uteri. Invented by A. G. HULL, M.D.

THE late Dr. Hull entertained an opinion, that, in a great majority of cases, prolapsus of the uterus was produced by the superincumbent weight of the abdominal viscera, which were not sufficiently supported by the abdominal muscles. The theory having been once invented, it was not difficult to hit upon an appropriate mode of treatment, and accordingly Dr. Hull produced an apparatus (which Dr. Ashwell recommends in a suspicious-looking certificate), for the purpose of "lifting up" the uterus, and thereby obviating, in a very direct and intelligible manner, its descent.

"This apparatus compresses, by a broad, soft, elastic pad, the whole *hypogastrium*, and the pressure is so contrived as to operate obliquely upwards and backwards. The effect of this pad is to give the weak-

ened lower portion of the abdominal muscles a congenial support, which, at the same time that it diminishes their labour, stimulates them by the well-known power of mechanical pressure upon muscular tissue, to a permanent renewal of their vigour."

In addition to the hypogastric pad, there is, also, a second, or perineal one, made of sponge, firmly encased in cloth, which is held in its place by an elastic strap passing between the thighs and over the region of the perineum, in the manner of a T bandage. We have no doubt but that Dr. Hull's bandage will be found useful in several cases of prolapsus uteri, particularly in such as depend on considerable hypertrophy of the uterus itself. In cases of incipient prolapsus, however, it seems to us to be an instrument more likely to aggravate than alleviate the complaint.

WESTMINSTER MEDICAL SOCIETY.

Saturday, April 7, 1838.

Mr. Hale Thomson, President.

CYNANCHE PAROTIDEA—PERFORATION OF THE STOMACH.

The discussion on Mr. North's paper respecting perforations of the stomach was renewed.

Dr. Johnson said there were three material points connected with the subject:—The pathological condition, or proximate cause, the diagnosis, and the treatment.

1st. The pathological condition consisted of one of the following:—A specific ulceration, as cancer succeeding to scirrhus, and generally situated about the pylorus; chronic ulceration, which was generally circular with raised and thickened edges; ramollissement, or softening of the coats of the stomach, produced by chronic inflammation; the ulcers, irregularly shaped, larger than the last, and showing marks of chronic inflammation; the fourth, which, though a proximate cause, was hardly a pathological condition, consisted of the solution of the coats of the stomach by the gastric juice, post-mortem. This last Dr. Carswell considers to be the only perforation which takes place after death; he acknowledges that perforation takes place from the two first causes, but rarely from the third. From experiments performed and facts collected by this distinguished pathologist, he states that the perforation which occurs post-mortem, takes place at the most depending portion of the stomach, and that there is no mark of inflammatory action either in the neighbouring parts or edges of the perforation; if this redness exists the perforation cannot have been the result of the gastric acid solution, and this mark therefore, formed a great distinction between ante-mortem and post-mortem perforations. Regarding the diagnosis of these various lesions after death, the perforation resulting from cancer was easily detected; the chronic ulcer was circular, with hardened and raised edges; the perforations from ramollissement were more irregular than the last, and frequently involved a considerable portion of the stomach, the coats of which were thin and eroded, showing marks of chronic inflammation.

Regarding the diagnosis during life,—

1. *Cancer.*—It is seldom that scirrhus or open cancer of the pylorus was not detected during life; the patient becomes so remarkably emaciated before death; there is a hardness in the region of the pylorus, sickness, and pain, which came on three or four hours after taking food; the peculiar countenance which characterises malignant disease was also present.

2. *Chronic ulceration.*—The detection of this condition was more difficult; cases were on record in which no phenomena, previous to the occurrence of the perforation, existed; we generally, however, found pain at a particular part of the stomach, and more so during the process of difficult digestion; in the majority of cases, also, there was pain a quarter or half an hour after taking food at one particular part of the stomach, and with the existence of these symptoms of chronic inflammation we might, by chance, as it were, diagnosticate the presence of ulceration.

3. *Ramollissement.*—This form was the result of chronic inflammation, from which, indeed, it could not be distinguished. We may assume, however, that chronic gastritis obtains, when there is, almost invariably, pain in the stomach after ingesta, and during the digestion of food, and which pain is relieved after the digestion is performed.

4. In the gastric acid solution there is no evidence, during life, of what will occur post-mortem.

TREATMENT.

1. *Scirrhus.*—Little required to be said respecting the treatment of scirrhus, the disease being incurable.

2. *Chronic ulceration.*—The diet should, as in the last case, be nutritive. When chronic inflammation was suspected to exist, small doses of the nitrate of silver were of great service; this medicine was exceedingly useful in dyspeptic cases, whether there was chronic gastritis or only inordinate sensibility of the nerves.

3. *Ramollissement.*—The treatment as used in the last disease was most successful. He agreed with Mr. North, that both stimulants and tonics were, twenty years since, too indiscriminately employed in these cases; but since the writings of Broussais, Wilson Philip, and others, stimulants and

tonics were very rarely given in chronic gastritis.

Regarding the discrimination of perforations of the stomach resulting from natural causes, from those which are said to follow corrosive poisons, Dr. Carswell states, that he never saw, or heard, of a case in which actual perforation followed the administration of such poisons.

Mr. North said, that many cases were recorded by authors in which the lives of individuals were put in jeopardy by the difficulty experienced in distinguishing perforation from natural causes, from that resulting from corrosive poisons; he believed no appearance observable in the stomach was sufficient to decide that poison had been taken, the only safe and sure diagnosis being the detection of the poison by chemical agency.

Mr. Streeter related a case in which a patient died from perforation of the stomach, resulting from the use of pills composed of concentrated sulphuric acid and oatmeal.

Dr. Johnson said, the continuance of the pills in this case for some time produced chronic inflammation and ulceration of the stomach, which was quite a different thing to the production of a perforation by a poisonous dose of the acid; he had omitted to mention the diagnosis of perforation of the stomach during life; he had only seen three instances of this disease in which the phenomena were so remarkable as to be at once recognised; the death-like pallor of the face, the extreme pain, the weak pulse, the coldness and flabbiness of the skin, never could be forgotten by those who had once observed them; the peculiar state of the pulse was particularly mentioned by authors.

Mr. Miller had seen two cases of perforation of the stomach occurring in young women, one apparently in previous good health, the other had suffered from dyspeptic symptoms; one died in nineteen hours; the other, in thirty-six hours after the attack; a small punch-like perforation existed in each case at the anterior part of the stomach. The peculiar symptoms described by Dr. Johnson as characteristic of perforation, were strikingly manifest.

Dr. Johnson was asked respecting his mode of using the nitrate of silver in dyspeptic cases, a full account of which we published in The Lancet, page 89, vol. ii., 1836—37, in a report of the proceedings of the London Medical Society.

Mr. Everitt proposes to deliver on this evening, before the members of the Westminster Medical Society, a lecture on the nature of all the possible products of combustion. The chief object of the lecturer will be to determine by experiment, and illustrate the probable effects of using the new patent fire-box of Harper and Joyce.

CLAIMS OF NAVAL SURGEONS.

To the Editor of The Lancet.

Sir:—They among your readers who examine the political records of the day, are probably aware that a Commission has been appointed, by direction of the House of Commons, to inquire into the respective claims of the officers of the Navy, Army, and Marine Corps, to receive promotion in their respective services. The investigation will, of course, include the claims of gentlemen in the medical department of the Navy. Each body of officers, in the three chief departments of the Service, will be represented by some gentleman of rank and information connected with naval and military affairs, who, unquestionably, will make it his study to promote the interests of his own more immediate class, with, as at present arranged, one exception, and that exception is well calculated to astonish the profession, for I have to state that, although the naval surgeons of this country amount in number to twelve hundred gentlemen, no officer, or employé in the public service, has been appointed to occupy a seat in the Commission, who is in any respect familiar with the state and condition, and the great and highly meritorious claims of that body, or is acquainted with the extraordinary neglect and the numerous insults which the navy surgeons of this country have at all times experienced at the hands of the great majority of their superiors. I trust, however, that this omission will be remedied before the labours of the Commission are commenced. The surgeons of the Navy must surely have been "*forgotten* at Court" again. They are *too petty a body* to be easily seen. They number but twelve hundred. The amount, however, is large enough to make a successful demonstration of their existence, if they choose to move in their own interest. I am, Sir, yours, &c.

J. Halliburton.

London, April 18, 1838.

AUTOGRAPH OF ALBINUS.

To the Editor of The Lancet.

Sir:—Knowing your readiness to protect any individual who is connected with the profession, however humble his station in it, emboldens me to make the following statement of facts:—

A week or two before the first number of Mr. Pettigrew's "Biographical Memoirs of the most Celebrated Physicians and Surgeons, &c.," appeared, he called on me, hearing that I had an autograph letter of Albinus, and requested the favour of my lending it, promising "to make the proper acknowledgment of the obligation he should be under," and to present me with a copy.

What acknowledgment he has made I need not say, as you and the subscribers to his work will perceive; neither has he fulfilled the other part of his promise.

In conclusion, I beg to observe, that it appears to me to be a curious coincidence that there should be two fac-similes of the writing, which appears beneath the autograph, viz., "*a Leidece*, 5 *Juillet*, 1726," and of which Mr. Pettigrew informs his readers as follows:—"The fac-simile of this writing, given beneath the autograph, is taken from a MS. entitled 'Prima(α) Delineationes Tabularum Sceleti et Musculorum Corporis Humani,' in the library of the Leyden University, and may be depended upon as the genuine hand-writing of this celebrated professor." The numerous gentlemen who have seen my autograph letter of Albinus, unite in stating that this is curious, as it (*a Leidece*, 5 *Juillet*, 1726) corresponds exactly with the writing in such letter. Apologising, Sir, for thus intruding on the pages of your Journal, which nothing but a sense of justice, and desire to afford a friendly caution to such gentlemen as may be disposed to oblige Mr. P. in a similar way, and to give them some idea of the treatment they are likely to receive at his hands, could induce me to do, I remain, Sir, your most obedient humble servant,

T. M. Stone.

7, Durham-place, Lambeth,
17th April, 1838.

P.S. I beg to say I shall feel great pleasure in submitting the original to the inspection of any of your numerous readers.

The Board of Health established at Rome, during the prevalence of the Asiatic cholera, has lately published its report, from which it appears that the number of persons attacked by the disease was 9372, of whom 5419 died.

BOOK RECEIVED.

The Wonders of Geology, &c. By Gideon Mantell, M.D. London: Relfe and Fletcher, 2 vols., pp. 709.—[We had prepared a notice of these interesting volumes for insertion in our present number, but are compelled to defer it until next week.]

TO CORRESPONDENTS.

A Student is herewith furnished with the requisite answers to the following three questions:—

1. "In the case of an inquest, can a coroner appoint any chemist and druggist, or a medical man *who is not a surgeon* (being only a licentiate of the Hall), to make a post-mortem examination?"

A coroner is not empowered by the new Act to summon a chemist and druggist to be a medical witness at an inquest, unless the individual in question be also a legally-qualified medical practitioner. A licentiate of the Hall, although he may not be a surgeon, is a legally-qualified medical practitioner, according to the terms of the Act.

2. "As a chemist and druggist who was in practice prior to the passing of the Act of 1815, claims the right of practising as a general practitioner, can he call himself *a surgeon*, and not be amenable to any authority for so doing?"

He can.

3. "If either of these persons be called to attend at an inquest, or before a bench of magistrates, or before a grand jury, and when asked what they are, they answer *a surgeon*, or, by written document, use this title, would the evidence given by either party be legal?"

If summoned as ordinary witnesses, the evidence of both might be legally received before the three tribunals which are specified, but in the case of an inquest, if either of the two parties named were summoned as a legally-qualified practitioner, his evidence would not, in that instance, be legally admissible.

The letter signed *Querist*, from Newcastle-upon-Tyne, shall be published in a future Number, with a few remarks; in the meantime we should be glad if our correspondent could sustain his views of the law by any grievances which have fallen under his own observation. If the grievances exist in theory merely, is it necessary that the Legislature should be asked to interfere?

Chirurgus (Hereford). The *special jury* was appointed at the instance of Merrick; hence the expense consequent on that appointment devolved on *the plaintiff*. We are not at all acquainted with the pecuniary circumstances of either Merrick or his wise lawyer, Sill. As to the chance of profit from the Danish claims, we believe it to be all fudge. If there were a chance of wealth from that quarter, it would be time for poor Prothero to be preparing to obtain, by an action at law, some pecuniary compensation for the dreadful losses so cruelly incurred.

A *Member of the Royal College of Surgeons, of twenty years standing*, will perceive that all the objections which he has urged against the Bill have been pressed against the measure in Parliament.

The circulars of *Mr. Wilkinson* have been received.

We cannot publish the statement of *Mr. Edward F.* As on a former occasion, the controversy to which it would lead would prove profitless.

For a number of communications, the publication of which has been unavoidably postponed, we will endeavour to find room in our next Number.